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Keiko Kurita

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Positive Transitions in a Changing World

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Science, Technology, and Society

Vassar College

2013

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1. Introduction

This thesis analyses the concept of change, explains the role of Transition Towns as a model for responding to climate change, and describes how transitioning¹ toward a low-carbon resilient community can help our current economic and social crises. In the first half of this thesis I argue that climate change, the economic crisis, and social inequality are all interconnected issues that will not be solved unless there is a cultural shift in the way we perceive ourselves and think about our relationship to the environment, other individuals, and society. I focus on the idea of change, non-linear change in natural systems, why we resist change, what happens if we resist change for too long, and how we can change the way we interact with our environment and our perceptions of ourselves. I explain Resilience Theory to better understand change in our complex world, identify the qualities of a resilient system, and analyze the Transition movement.

In the second half of the thesis I describe how Transition Towns are one of the promising and inspiring models of grassroots community-led pro-environmental action. I breakdown the Transition model and clarify how transforming an already established town into more a resilient community can theoretically improve the well-being of the town and its members. I explain how the Transition model uses resilience theory and why Transition is a viable alternative path to our current lifestyle by highlighting the similarities and differences between two Transition Towns. I explore some of the successes from the original Transition Town Totnes in Southwest England and highlight the actualized benefits of creating a more sustainable way of life. I investigate Transition

¹ In *The Transition Companion* the definition for transition is: “passage from one form, state, style or place to another; a period of transformation (Hopkins, 2011: 10).

in my hometown of Santa Cruz, California and the perceived obstacles to transitioning a midsized city in the United States to a resilient community. After reviewing these two Transition Towns, I evaluate the Transition movement and identify ways to improve the Transition movement. I also analyze the city of Santa Cruz's capacity to take responsibility for their ecological footprint according to Middlemiss and Parrish's (2010) theoretical framework of community capacity. This framework assists a community in accurately assessing its own specific limitations to change and understanding how to embrace its strengths in order to create changes and become a sustainable community.

In this thesis I argue that our inclination to resist change has resulted in unsustainable systems that are damaging to humans and the environment, but the Transition model offers an alternative way of living and interacting with our environment that can create resilient socio-ecological systems. Since the Transition movement takes an ecosystemic view of our current issues, is created through experimentation, and understands that transitioning to a low-carbon society is specific to the social context of a community, the Transition Network has created a model designed to increase the community resilience that is adaptable, open-ended, and can continually evolve. This model, although fallible if not used by individuals with the personal capacity to make sustainable changes, is a powerful vehicle for discussing sustainability, spreading the idea of low-carbon communities, and engaging communities in collective action to localize their economy and create more sustainable lifestyles. After examining Transition Santa Cruz, I conclude that Transition Towns are an important part of the environmental movement because they provide a language to discuss environmental movements that

takes into account the interconnectedness of our personal, economic, social, and environmental issues.

Stagnant in a Time of Change

In recent years, destructive extreme weather has transformed climate change from an inconvenient truth to a life threatening certitude that becomes harder to ignore. In 2005, the United States experienced one of its most devastating years. Our nation was hit with four major hurricanes along the Florida and Gulf Coast that accumulated over \$187 billion in damages. Hurricane Katrina alone claimed over 1,700 lives and displaced thousands of people (*The New York Times*, 2012). Since then, the weather patterns have only gotten more extreme. In 2012 the United States experienced 11 extreme weather/climate events. Each of these events recorded losses of at least \$1 billion and in total these events are believed to have caused 349 deaths. These extreme weather/climate events included tornadoes, yearlong drought, severe weather, hurricanes, and wildfires that have impacted all regions of the United States (National Climate Data Center, 2013). These extreme weather conditions are the result of climate change.

Climate change is caused by an imbalance in the atmosphere due to changes in atmospheric concentrations of greenhouse gases (GHGs) and aerosols and changes in the amount of land cover and solar radiation (IPCC, 2007). There is a major imbalance in the release and removal of carbon in the atmosphere. Prior to the Industrial Revolution, the carbon cycle was fairly balanced and the atmospheric concentration of carbon dioxide was 280 parts per million (PPM). With the technological advances of the Industrial Revolution in 1750 came a significant increase in the amount of coal, oil, and gas being used for fuel, which has released more carbon into the atmosphere than can be absorbed

and has resulted in an atmospheric pressure of 390 PPM. There are both natural and anthropogenic drivers of climate change, but the 70 percent increase in GHG emissions, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) between 1970 and 2004 and the increased amount of aerosols in the atmosphere is due to the increased pollution from combustion of fossil fuels, changes in land use, deforestation and increased use of livestock, increased mining, drying out of the wetlands, agriculture, and airplanes. Both the United States Environmental Protection Agency (EPA) (2012) and the Intergovernmental Panel on Climate Change (IPCC) (2007) state that natural forces of climate change do exist, but are not sufficient to explain recent climate change and that humans are largely responsible for the increased amount of greenhouse gases and the increase of Earth's temperature by 1.4°F in the past century. The Earth's temperature is estimated to rise another 2 to 11.5°F in the next century (EPA, 2012; IPCC, 2007)

When we think about the act of burning fossil fuels, it is not hard to understand why our dependency on fossil fuels is damaging to our lives. Fossil fuels are created from organisms that have been decomposing in the ground for millions of years. Most of our energy at this time comes from digging up death and burning it. We burn death, observe the black smoke plumes, and are then surprised when children develop asthma. Our energy consumption is not conducive to promoting life and well-being because it comes from death (Speech by Van Jones at Design by Nature Conference, 2012). We cannot thrive in a world that is driven by death. Development models based on a power-driven competitive ethos, rampant individualism, and unregulated growth are dependent upon the consumption and abuse of natural resource, which in turn are tied to inequality, violence, and poor quality of life throughout the world (Pilon, 2010).

The Idea of Change

Whether we like it or not, this is a time of change. The challenges we face today of climate change, the financial crisis, and social inequality are highly interconnected and intermesh with one of the most difficult relationships to understand, the relationship between society and the environment. However, science has shown and most of the world understands that the temperature of the earth is increasing and our environment is changing as a result, to a great extent, of human activity. The question we face right now is this, how are we going to adapt to these changes to mitigate the damages we have done and are doing to the earth and secure our own survival and that of future generations? Our world and our nation face a large amount of uncertainty.

But we have always understood that when times change, so must we; that fidelity to our founding principles requires new responses to new challenges; that preserving our individual freedoms ultimately requires collective action. [...] Now, more than ever, we must do these things together, as one nation and one people. We, the people, still believe that our obligations as Americans are not just to ourselves, but to all posterity. We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations. Some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires and crippling drought and more powerful storms.

The path towards sustainable energy sources will be long and sometimes difficult. But America cannot resist this transition, we must lead it. (President Obama's Inaugural Speech, 2013)

After President Obama's first term some people may have lost hope in the change that he promised, but now more than ever we must embrace these two ideas. In his Inaugural Address, President Obama touched on crucial elements of transitioning to a sustainable world. First, we must recognize that we are all part of a world that is constantly changing. Secondly, it is important to view climate change and our other

crises as challenges to be met. We are not helpless; we must change our way of thinking in order to find new responses to these new challenges. New responses will take a different way of thinking and a new way of acting; prosperity for all and collective action must be the goal and way of responding. Thirdly, as a wealthy and developed nation we have the obligation not only to self, but to everyone on earth and future generations to decrease the amount of energy we use and GHG's we emit. Lastly, we must not resist this transition to sustainable energy. I am thankful that President Obama addressed the issue of climate change in his speech, but I do not think it is enough or even possible to just transition to sustainable energy sources. We must transition to a resilient nation in which individuals, organizations, our culture, and our infrastructure reflect a sustainable model of behavior. I believe that renewable energy sources are only sustainable if we create a model of development and business that is based on a triple bottom line of social, economic, and environmental sustainability. We must not look at energy as our only unsustainable system because climate change is connected to our unsustainable business models and lifestyles. In transitioning to sustainable energy sources we must also transition our culture and realign ourselves within an ecological lens that acknowledges our role within the web of the world, instead of dictators of earth.

This transition towards sustainable energy sources, lower energy consumption, less dependency on fossil fuels, and a new culture of cooperation and environmental responsibility has already begun. It is inspiring to see the different ways in which people all over the world are responding to climate change. It is important to focus research on and distribute information about ways individuals and communities are positively impacting our world because it is important to increase awareness of alternative

sustainable systems and not get stuck on the negative aspects of human nature. Climate change has shown that even in times of uncertainty humans are extremely creative creatures and have the capacity² to make positive changes. There are many ways to respond to climate change. In this thesis I will explain the new movement of Transition Towns, the way in which the ideas of transition and resiliency are changing the way we think about and respond to climate change, and the role Transition Towns play as a model of community-led pro-environmental action.

The Transition Network originated in 2006 out of Totnes, a small town in the southwest of England. The town has been called “the capital of new age chic” and the average citizen is described as “a sandal-wearing, crystal-gazing soap carver subsisting entirely on brown rice and organic parsnips” (Hopkins, 2012). This is probably why I felt completely at home when I visited the town last spring. *The Western Morning News*, a paper that covers the South West of England and is usually full of climate skeptics, released an article describing the progress Totnes has made in transitioning to a more resilient town with sustainable energy sources.

In an interesting twist to the climate change debate, communities and individuals once seen as quaintly idiosyncratic for their way-out views have now become mainstream and may yet provide some of the answers to the biggest questions we all face. Totnes, which has been drawing freethinkers with serious concerns about the environment for decades, now appears to have a concentration of like-minded individuals in the right place at the right time. (Western Morning News, 2009)

This acknowledgement from a conservative paper shows that Transition Town Totnes is making real and positive changes; and the now 446 official Transition

²My use of capacity draws on Middlemiss and Parrish’s interpretation of capacity as “the ability of the community and its members to make changes by drawing on the resources available to them individually and collectively” (Middlemiss & Parrish, 2010: 7561)

Initiatives around the world demonstrate how the model and culture of transition is applicable to many different social contexts. President Obama has made it known that he wants to tackle the threat of climate change and our socio-economical challenges with new responses of collective action, but our business-as-usual approach has not provided the United States with any hope of leading this transition. In order to create these new responses we must change. We have been hearing about change and the need for change since the 2008 Presidential Election, but what is this change?

We must harness new ideas and technology to remake our government, revamp our tax code, reform our schools, and empower our citizens with the skills they need to work harder, learn more, and reach higher. But while the means will change, our purpose endures: a nation that rewards the effort and determination of every single American. (President Obama's Inaugural Speech, 2013)

So our means must change, but in what way? Our society will never become a nation of equal opportunity if it continues to be driven by the pursuit of financial capital. Our nation is supposed to be driven by “tolerance and opportunity; human dignity and justice,” but these principles are rarely put into practice (President Obama, 2013). On January 21, 2013 President Obama told Americans “that the most evident of truths - all of us are created equal – is the star that guides us.” But how does this actually become instilled in the people of America and what does equality look like? We must find a new way to create equality for all and give every human the opportunity of life, liberty, and the pursuit of happiness.

You and I, as citizens, have the power to set this country's course. You and I, as citizens, have the obligation to shape the debates of our time — not only with the votes we cast, but with the

voices we lift in defense of our most ancient values and enduring ideals. (President Obama's Inaugural Speech, 2013)

This speech was inspiring, but it still left the source of change unresolved. President Obama called on Congress to put parties aside and act, but he did not call on action from the people. It is the norm to cast votes and speak of our values, but this alone has not and will not get us closer to equality. If we want to create equality for all and give every human the opportunity of life, liberty, and the pursuit of happiness, then we must take action. We cannot just talk about equity and change and hope that everything will be resolved if we cast our votes; we must embody change. We, the individuals, must change the way we view ourselves. We are individuals, but who we are is not defined by our independence. We are defined by our connections to other people and our environment. In the next and last section of my introduction, I explain my own thoughts on interconnectedness from my own experiences and research into eastern healing systems, spirituality, thermodynamic systems, and life.

Interconnectedness: what this means to our freedom and responsibilities

We think our brain is the sole processor of everything that goes on in our lives, but too often we stop there and forget that we have a body. Our body is how our mind engages with the world and interacts with our surrounding environment. Everything outside of our skin is our environment. Sitting in a classroom, everyone in the room is part of our environment and we are part of everyone's environment. Nature is the sum of everyone and their environment (Svoboda, 1998). Now, I can discuss interconnectedness on a spiritual level or I can explain interconnectedness on a very tangible physical level. One of the ways we are all interconnected is through our interaction with the environment. Food is a prime example because we eat items from our environment. We

digest food and our body incorporates the nutrients and toxins from the food into our body and into our being. But food is not just a physical thing. What we digest greatly affects how we think and how we think affects what we eat. For example, emotional eating, aphrodisiacs, energizing vitamins, calming herbs and teas, uplifting caffeine and sugar, and depressant alcohols all effect how we feel, think, and act. We all experience this process of taking something separate and making it part of ourselves, but we don't always realize it and often overlook how our environment affects us because we think of ourselves as independent beings. However, we even refer to difficult situations as difficult to stomach. Situations that we do not fully digest can result in emotional and physical discomfort. Our lack of awareness to our connection with our environment does us a huge disfavor and results in overindulgent behaviors that adversely affect the environment and our 'self.' We also forget that our relationship with the environment is bidirectional. People tend to understand that to make a human relationship work a person can't always take from someone, we must give so we can receive. This should be the same mentality in the rest of our relationships.

We rely on the world to continually supply us with goodies and we rely on nature to provide us with enough digestive power to consume them. Most of us call this ability to self-indulgence freedom. True freedom, however, should be thought of as the ability to be totally adaptable (Svoboda, 1998). Enjoyment is certainly one of life's purposes, but we lose our ability to enjoy life when we exceed our limits. Limitation is inherent in life and when a threshold is crossed a system is thrown into chaos and uncertainty. We are limited by the necessity to breathe and eat and sleep, but one of our most important limitations is our body's capacity to endure our indulgences. There are certain thresholds

for each person's body and for the world; and the two thresholds are connected through their dependence on natural systems. We can either willingly limit ourselves or nature will limit us. Nature limits humans with disease, which forces us to slow down and rest. This is Mother Nature's way of looking after us. Disease is an opportunity to learn about more about who we are and our relationship to our environment (people, work, food, lifestyle, natural and unnatural surroundings). Disease is not inherently good or bad, but part of life. They give us a chance to reflect on our lives and to change our detrimental interactions with our environment.

Mother Nature has been warning us of our errors over and over again with climate changed induced natural disasters and diseases; but we have not been listening. However, in the end however, she can only do so much. If we do not listen and do not change, we will not be able to survive. Mother Nature and the earth will continue, but our world will fail to exist. This is the state of the world in which we live. It is freedom versus responsibility: either we restrict ourselves a little bit each day or nature will come along and place restrictions on us and our opportunities. Our addiction to over-consumption is at the root of obesity, inequality, and climate change. Obesity, the over-consumption of food, and climate change, the irresponsible-consumption of energy, create a world where not everyone can prosper. How do we change these detrimental habits and redefine freedom from the ability to overindulge to the ability to adapt? In regard to climate change there are many different responses that governments and people can make in order to try to reduce greenhouse gas emissions, but Transition Towns, eco-villages, and such are some of the few models that make lifestyle changes, so that we can live within the limits of the Earth. They are not just environmental projects;

they are a cultural shift from overindulgence to living within our means here on earth. It is about equity and the health of humans and the earth.

There are many people who are concerned about the environment, but do not know how to take action. Transition aims to create a space where people's values and actions can be aligned. I believe that the Transition Town model is one way to help our society change the way we view freedom and our responsibility as members of the earth because Transition works to increase the knowledge, skills, values, and enthusiasm of a community and its members. Transition can help empower communities, so they have the capacity to change and take action towards a more resilient future. The goal is not to just avoid completely destroying the earth and sustain the current state of society. The goal is to transition to a society which enables the flourishing of all individuals.

2. Resilience Theory: The Study of Change

But before we can embody change and adapt to the changing world we must have a way to study and understand change. Change within a society happens on every scale. In order to change our means to reach equality, individuals must change their relationship with their self, others, the environment, and society. Collaboration between different fields of study is the key to understanding how to change the direction in which our current system is headed. I believe that Resilience Theory (RT) is one of the best ways to understand social-ecological systems because it “presents an approach to managing natural resources that embraces human and natural systems as complex systems continually adapting through cycles of change” (Walker & Salt, 2006). This cycle of change is known as the adaptive cycle. RT originates from ecology and the study of ecosystems and is predicated on the fact that change is inevitable. If systems resist or ignore change, then systems miss opportunities to become more resilient and become weaker systems that are more vulnerable to shocks (Walker & Salt, 2006).

The adaptive cycle of a system shows how systems change over time and is characterized by four different stages: rapid growth (r), conservation (K), release (Omega, Ω), and reorganization (alpha, α). This cycle occurs over different scales and lengths of time. The rapid growth (r) phase occurs when resources are readily available and there are opportunities for exploitation by “r-strategists” who are good at adapting to variability and uncertainty. In our economy these “r-strategists” are known as entrepreneurs and innovators who create start-ups and new markets with their products. This r-phase is a time of expansion with loose ties between actors. At the end of the r-phase there is little opportunity for new actors to enter. Conservation (K) is the next

phase and is characterized by slow and gradual accumulation of resources. “K-strategists” specialize and gain the competitive edge over the previous “r-strategists” by becoming efficient, reducing variability, strengthening ties to other actors, and operating over longer time periods and larger spatial scales. We recognize this as greater efficiency with large economies of scale. In the K phase capital increases, connections strengthen within the system, efficiency is increased, and there is very little opportunity for new actors to enter the system. However, increased efficiency and tightly bound capital means there is a greater dependency on the structures in place and the system is less flexible and therefore less resilient. A system moves into the release (Ω) phase when a disturbance is greater than the threshold of the system. The longer a system is in the K phase the less resilient it is and the easier it is for a disturbance to force the system into the Ω phase. Resources that were once tightly bound during the K phase are now released and connections within the system are dismantled. The Ω phase can be chaotic and destructive, but it is also known as a time of “creative destruction” because capital and resources are freed up for reorganization and the opportunity for an improved system. The reorganization (α) phase is a time of renewal and opportunity for experimentation; creativity is key as this is an important time for shaping the future and creating a new identity. This new identity shapes the way in which the renewed system will develop. Reorganization is seen as the beginning of a new cycle. This new cycle can be a repetition of the previous, a variation of the previous cycle or a completely new system can be established depending on who and what are the driving and attracting forces of the α phase. Adaptive cycles generally follow this pattern of rapid growth, conservation,

release, and organization, but it is not uncommon for systems to move back to the conservative K stage after the uncertain Ω phase.

A good example of how a system can return to the K phase after the uncertain and chaotic Ω is the 1973 Oil Crisis because “during the 1970’s much progress was made through experimentation and technological development for the duration of the energy crises; but once oil supplies returned to normal and the financial incentive for radical energy efficiency was removed, the movement largely lost the attention of mainstream builders and government” Seyfang (2010). The oil shortages could have been an opportunity to diversify energy resources and make the economy more resilient to future oil shortages, but the short-term goals of business and political leaders for economic growth and strengthening the status quo thwarted the opportunity to make the energy and economic systems more resilient. RT is both philosophical and pragmatic because it is not only about understanding how and why the world is constantly changing, it is also about being able to use this knowledge to engage and work with the changing world so that we can make our systems more sustainable. If we resist change we will become victims of change rather than benefiting from it (Walker & Salt, 2006). The oil crisis of the 1970’s showed us that it is dangerous to optimize for particular products like energy. Our current economy runs on creating efficient systems through optimization, but according to resilience theory too much emphasis on efficiency is what has weakened our economy.

Optimization is detrimental for a couple of reasons. First, it is based on the idea that there is an optimal level at which a system can operate and maximize production, but this is not the way the world works (Walker & Salt, 2006). We have engrained into our

thinking that homeostasis is the way our body and the world works, but it is more realistic and constructive to describe systems as operating according to homeokinesis. Replacing stasis with kinesis acknowledges that a system is in constant fluctuation within a desired state, rather than having one optimal static state³. Systems that focus on obtaining an optimal state do acknowledge that changes occur, but the models of optimization rely on changes being linear. However, life is not linear. The emergence of life relies on non-linear feedback loops and diversity within a system. Life would not have emerged if there were not a variety options to create and new domains to explore (Macklem, 2007). And non-linear systems are unpredictable. We can find probabilities, but there is no guarantee of cause and effect in a non-linear system. Therefore, our social-ecological systems, which are living systems, must be analyzed according to models that account for non-linear effects. Since resilience theory is based on complex natural systems, it takes into account the non-linearity of social-ecological systems and

³ I am borrowing the idea of homeokinesis from Peter T. Macklem's (2007) paper *Emergent phenomena and the secrets of life*. I first read this article in my biochemistry of exercise course, but it immediately caught my attention because of its philosophical nature. He believes that homeostasis is a misleading way of describing fluctuating systems because in order for a system to adapt it must be able to operate within a constantly changing state. His paper focuses on physiological systems and defines homeokinesis as "the ability of an organism to utilize external energy sources to maintain a highly organized internal environment fluctuating within acceptable limits in a far from [thermodynamic] equilibrium state" (Macklem, 2007: 1848). Although this article is about human physiology and the emergence of life, its analysis of thermodynamic systems goes beyond physiology. In regards to disease he quotes Stuart Kauffman and notes "'we are poised on the edge of chaos,' and disease states can take us into chaos or away from it depending on the energy dissipated. I believe we are on the threshold of a new theory of disease based on the consequences of living in a phase transition" (Macklem, 2007: 1848). Because we live and life exists in a phase system between order and chaos we have the ability to adapt to external stimuli while maintaining a stable, yet fluctuating state. His notion of disease state is similar to my previously statements on over-consumption and going beyond thresholds set by Nature. Disease either limits us and forces us to back down from certain behaviors to obtain a more ordered state or disease can throw us beyond our means and result in chaos that is unsupportive for life (Macklem, 2007). This is the delicate balancing act of life between order and chaos. There are limits to the amount of energy we can consume before the system is forced to adapt or destruct. The carbon cycle follows a non-linear positive feed loop. This means, when carbon dioxide concentrations increase, the earth warms and reduces terrestrial and ocean uptake of atmospheric carbon dioxide, which increases carbon dioxide concentrations and creates even greater climate change (IPCC, 2007). Climate change is unpredictable, but mitigating its effects is crucial.

acknowledges the requirement of a system to be diverse and avoid optimization. It is important to understand that change is dependent on scale. Most of the changes that we deal with are on a small scale and follow linear paths of change, but change on a larger scale like an ecosystem is non-linear and often misunderstood because humans for most of their lives only notice local changes. Studying ecosystems has given us a better understanding of how life systems work because we have figured out that we can no longer study an ecosystem from our one point of view. In order to study and understand an ecosystem we must look through an ecological lens and view the entire web of interactions that create a life. We must value all the components that create the web of life because we cannot create a sustainable living system without a diverse network of actors.

The second reason optimization is detrimental is because it devalues everything that cannot be quantified such as beauty, species, and ecosystem services⁴. It only gives economic value to resources that increase efficiency. Thirdly, optimization takes a short-term view and does not plan for a future; immediate financial gains take precedence over long-term sustainability. Optimization is detrimental because it tries to control all components of a system in order to isolate and maximize the production of one component, but nothing can be separated from the web of life. Optimizing energy sources and limiting diversity of food with monocultures does not create sustainable systems of living because every system in the world is fundamentally connected to the ecosystems of earth, a non-linear dynamic system of small-interconnected miracles working together to create life.

⁴ According to Walker and Salt (2006) 'ecosystem services' are "the unquantifiable and unmarketed values, such as the life support, regenerative, and cleansing services that nature provides" (7).

Redman (2005) argues that research must take an integrated and interdisciplinary perspective to better understand societies and their biophysical interactions. Anthropological archaeologists offer valuable insights into our contemporary struggles to sustain relationships between social and environmental systems. Humans today are not unique in their struggle to find a sustainable socio-environmental system. Twenty thousand years ago humans faced threats from an unsustainable relationship with their environment through either anthropogenic degradation of resources or natural climate changes. RT is fairly new to the field of archaeology, but being able to observe a complete adaptive cycle from the past shows how the short-term goals of a society translate into long-term consequences. It is important to understand the ultimate drivers of human and environment interaction. Humans have the unique quality of being self-reflective, unlike other species in ecosystems, which means that they are goal oriented and drive their society toward a desired state. Our relationship with the environment is dictated by our goals. If we are aimed toward increasing financial capital, then resources will be exploited, businesses will focus on productivity and optimization, and we will destroy the environment while becoming less diverse and less resilient.

The long term archaeological perspective shows that decisions to increase production and strengthen a society in the short run have long term consequences that are unseen by a society; while cultural traditions that appear illogical or inefficient in the short run work to build resilience within a society and preserve the relationship between the society and its environment (Redman, 2005). Social memory of traditions within a system can be a beneficial resource during reorganization because a system does not have

to start from scratch. However, social memory can also be detrimental because a society may have strong ties to a way of living and thinking that is extremely resistant to change. This means that a society may encounter multiple release phases before there are any real changes to make a system more resilient. Systems will continue to pass their threshold if they do not recognize their own limitations or do not create and follow values that foster sustainability and resilient systems. In this way, the adaptive cycle is not a complete transformation of a system, but more often a shift along a spectrum of different functioning systems. History shows us why past civilizations like the Ur III dynasty collapsed. The overexploitation of productive landscapes by a centralized authority led to a hierarchical sociopolitical structure that thrived in the short run because they were able to create surpluses, but this was not sustainable. The depletion of resources resulted in the collapse of the centralized authority. Large populations without any mechanism to create social memory are unstable and more vulnerable to collapse from external forces like climate change.

We are considered to be in the K phase (conservation) of the adaptive cycle because we are trying to hold onto the capital we have accumulated from exploitation as we fight to prevent our collapse. However, the longer we try to stay in the conservation stage the easier it is for any little shock to disrupt and dismantle the entire system. Thompson and Turk (2009) offer hope that the release phase of the adaptive cycle does not mean complete destruction of a society; it may just mean that the society changes and goes into a new adaptive cycle with the possibility of being a more or less diverse, flexible, and resilient society (Walker & Salt, 2006). Destabilizing forces can help create more diverse and flexible societies, if a system is able to recognize their

position in the adaptive cycle (Thompson & Turk, 2009). In our case climate change is the destabilizing force that has shown us that we must diversify our energy resources and change the way in which we think about sustainability. However, the introduction of hydraulic fracking shows that oil companies have not learned this lesson yet. Their focus is on making money and holding onto the tightly bound system they have created. As we continue to persist with business-as-usual, we continue to destroy our environment and our future. So why do humans continue to support the dominant systems even if they do not benefit from them?

What is Preventing Change?

It is difficult to shed our frame of reference even when there is evidence that our way of seeing the world is wrong. Fear is one thought trap that has prevented humans from rejecting the current system of production, destruction, and consumption because people are afraid to challenge common sense. Emotions have the ability to trap us or free us. It is easier to stay inline with the status quo than to stretch beyond our comfort zone to make changes. Our fear of being without has bound us to the current paradigm. The axiom of our current free-market economy that competition drives the economy teaches individuals to be independent and to compete for the limited resources available in the world. This gives individuals the false impression that this is the way they must conduct their life in order to survive, when in reality this relentless competition for money and power creates an unhealthy and unsustainable lifestyle for much of the world.

There are enough resources and food for everyone in the world (Holt-Giménez, Shattuck, Altieri, Herren, & Gliessman, 2012)⁵. The free-market economy just makes it

⁵ Scarcity is not the reason for hunger because “the world already produces more than 1.5 times enough food to feed everyone on the planet” and “the rate of global food production has increased faster than the

appear there is a scarcity and necessity for competition because it exploits and depletes natural resources. Competition as the driver of the current economy concentrates the wealth in the hands of a few and fails to provide fundamental needs for many individuals and entire societies (Shiva, 2005). Our current economic policies allow corporations to exploit people and resources to create products that are cheap for consumers, but are costly to the well being of the planet. We are so distanced from the sources of our products that what we consume has no real value to us except monetary value. We do not view the cost of products we buy as it relates to the well being of others and the earth because our economic systems fails to give values to ecological services. The external costs to the environment and producers of goods are not factored into the monetary value of goods. This allows consumers to naively buy products that damage the earth. Most consumers do not think about the impact their choices have on the environment. When I went shopping I never used to think, “How has the new global market for quinoa changed the lives of the people in the region where it is grown?”⁶. I had the good intention of not eating meat as a source of protein for health and ethical reasons, but was uninformed about the other consequences of my food choice (Blythman, 2012). Ignorance is temporary bliss.

Our national government acknowledges that our lifestyle is damaging to the environment and ourselves, but our reliance on the centralized national government to make beneficial decisions is our own naïve pitfall. Government is supposed to represent

rate of global population growth” (595). Inequality and poverty are the real reasons for food insecurity. Industrial crops are going towards biofuels and animal feedlots instead of feeding the hungry (Holt-Giménez, Shattuck, Altieri, Herren, & Gliessman, 2012).

⁶ Quinoa is a high protein and low-fat grain grown in Peru and Bolivia that was once a staple for local communities. But since the introduction of quinoa to the western market in 2006, the people who grow quinoa can no longer afford it and now have to eat the cheaper imported fast food because their once diverse crops have now been converted into quinoa monoculture, the products of which are shipped abroad (Blythman, 2013).

the people. Thanks to the Citizens United v. Federal Election Commission Supreme Court ruling in 2010⁷, corporations are protected under the First Amendment and greatly influence government with money. Corporations have a tremendous amount of lobbying power in Washington in regards to policy. Corporations define productivity by financial profit and give no value to nature or people's sustenance (Shiva, 2005). Their system of optimization for profit has given corporations power over every sector of our lives because corporations can make products cheaper than other small scale producers, but their efficient production system is detrimental to ecosystems and therefore our own economy and social-ecological system. The current system tells us that financial capital will bring us happiness, but our decisions to buy monocultured food from a country four thousand miles away to save fifty cents supports businesses that damage local social-ecological systems, which results in hunger and thirst for the unfortunate communities plundered by large agricultural businesses (Blythman, 2013)⁸. However, one of the challenges we face is that many people do not have a choice of whether they can spend the extra money on local produce, they are happy just to get produce. Many people currently think about sustainability within the current paradigm of consumerism. It is not enough to strive for sustainability through 'green consumerism'. Our static system held together by optimization will not change from consumer behavior and the idea of changing consumer behavior puts too much emphasis on consumption. Green consumerism is still economic individualism and the belief that we can consume our way

⁷ On January 21, 2010 the Supreme Court in a 5-4 ruled that corporations are covered by the First Amendment and have the same rights as individuals in regards to free speech. This overrules two precedents of First Amendment rights for corporations. This gives corporations even more lobbying power in Washington because it means there are no restrictions on how much corporations can spend to endorse or oppose political candidates (Liptak, 2010).

⁸ Market demand for year-round vegetables has resulted, for example, in asparagus monoculture in the Ica region of Peru. This water intensive asparagus has depleted the community of its local water resources (Blythman, 2013).

out of our crises. We need to change our idea of sustainability from green consumers to active ecological citizens “who act ethically in public and in private to configure the patterns of their lives to reduce environmental and social impacts on others (Seyfang, 2010: 7628). Individualism and consumerism will not change our economic and social-ecological systems because they are the foundations of our current paradigm.

Embracing Change and Aligning Values

In order to find answers to our economic crisis we must shift our focus away from growth or no-growth because the idea of market growth remains within the paradigm of the dominant economy (Lappe, 2011). The growth of the current economy provides no indication about the well being of humans or the planet, yet we still continue to measure progress and success according to measurements like the Gross Domestic Product. It is not hard to believe that we are in the midst of economic, social, and environmental crises because our society’s perception and values are so disordered (Pilon, 2010). Our society has personified the free-market economy and worries about its health and growth on a daily basis, but the market itself has taken away the value of ecosystems and humans, the real living entities that need our concern (Shiva, 2005). Climate change is not just an environmental problem; it is an issue of ethics. Our cultural turmoil and lack of ethical or spiritual guidance has turned people into “compliant egocentric producers and consumers” (Pilon, 2010). We have blindly followed along with the free-market economy for too long.

There must be a change to the business-as-usual approach of viewing productivity as maximum monetary profits because this system does not value nature’s sustainability and human sustenance. Human health is also tied to the health of the environment

because nature is what provides us with every life-sustaining resource (Shiva, 2005). We must create an economy that values human life and is able to provide fundamental needs for everyone, while respecting nature. Nature has its own economy; it is the largest producer in the world, but it is currently viewed by businesses as a free supply source (Shiva, 2005). If we continue to let our free-market economy take advantage of the environment, there will be no economy or life for humans because there will be no resources, unless we make changes.

The economy must promote the well being of humans and the environment in order to create a sustainable society. The health and well being of humans are intertwined with the health of the earth because fundamentally humans are ecological beings (Lappe, 2011). Damaging the environment only hurts us. If we protect and invest in nature's economy, then we are investing in our own well-being. Right now our smartest investment for the future doesn't lie in any one technology. Our smartest investment is to align with the largest resilient economy, the environment. Vandana Shiva (2005) refers to this as the sustenance economy. In a sustenance economy livelihoods are derived directly from nature and basic human needs are met in a sustainable way. Humans will thrive when we align ourselves with the rest of nature as sustainable creatures in the web of life (Lappe, 2011). This new life-sustaining economy based on nature requires a new way of measuring the success of individuals and the progress or strength of a nation or city.

The kingdom of Bhutan has established Gross National Happiness (GNH) as their official policy for development instead of gross national product (GNP), which is used by the United States and most other nations. This altruistic economy was established

because the leaders wanted their economy to reflect and promote Buddhist principles. GNH measures progress with the qualitative indicators of well-being, happiness in people, and good stewardship of the earth. Economic policy in Bhutan reflects the social and cultural values of the people. GDP is a quantitative measurement of production and consumption. What do our economic policies say about Americans? In March of 1968, Robert F. Kennedy gave a speech at the University of Kansas as part of his presidential campaign. The following is his description of GNP and what it reflects:

But even if we act to erase material poverty, there is another greater task, it is to confront the poverty of satisfaction - purpose and dignity - that afflicts us all. Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things. Our Gross National Product, now, is over \$800 billion dollars a year, but that Gross National Product - if we judge the United States of America by that - that Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans. (Kennedy, 1968)

Our world is run by the economy, but the earth functions according to ecosystems. The world that free-market capitalism has created is not sustainable on this earth because free-market capitalism does not give value to living systems and does not

reflect what it means to be human. Economies based solely on GDP and material consumption do not guarantee the promotion of well-being because they only measure financial capital and ignore the more important parts of life like personal development, fulfillment, social capital, and natural capital (Anielski, 2007). If the United States wants to create a society that values opportunity, human dignity, and justice, then it must create an economic system that reflects these values. A thorough analysis of quality of life must take into account all forms of “being-in-the-world,” which includes people’s intimate interaction with themselves, their interactive relationships with other beings, their social relationships with society, and their biophysical relationships with their environment. Evaluating the impact of technology, development, education, and policy against these four levels of being-in-the-world makes sure that changes implemented to a society enhance quality of life (Pilon, 2010).

So where does change towards this new society begin? And how do we start to correct our ethically inept economy so that we don’t destroy the environment? In order to change an individuals’ relationship to themselves, individuals must not get caught up in who we think we are. First, we must stop thinking of ourselves as a consumer society. Individuals buy things for comfort and convenience because of laziness or a lack of basic living skills and knowledge, but this does not mean that we are incapable of creating for ourselves. Increased self-sufficiency means less reliance on life-damaging enterprises and fossil fuel energy. Individuals also buy goods to fulfill a need for connection to people and nature. Humans should spend more time in a natural environment instead of watching television and communities should invest in public spaces that increase social

interaction and strengthen the social fabric (Adler & Newman, 2002)⁹. Organizations like City Repair out of Portland, Oregon find ways to make streets and neighborhoods more accessible for people instead of cars. This changes the dynamic of the area and strengthens social capital¹⁰ with creative community building activities. As part of the localization movement, City Repair is creating spaces in which communities can come together to increase community communication, empower each other, and increase their cultural capacity (City Repair, 2013). In order to create an economy that fosters human development and environmental sustainability, humans have to identify real luxury as beauty from nature's gifts and well-being as a life filled with a deeper understanding of self, increased social capital, and a greater connection to nature (Lappe, 2011). Humans must develop the ethical and/or spiritual values of equity and respect for nature if they want to free themselves from the so-called free-market economy and create a resilient society with a sustenance economy.

Humans often focus their attention on fixing problems, but fixing the environment implies that it is separate. Humans are technically physically independent from the environment, but our well-being and fate is intertwined with that of the environment. Instead of fixing the environment, individuals should realign themselves and their behaviors with nature in order to create a sustainable lifestyle. If we become ecological beings, then we open ourselves up to limitless possibilities of a thriving future. Our competitive struggle for money and power has created separateness, scarcity, and stasis in

⁹ Social interactions have a large impact on the well being of individuals. It has been shown that socially isolated individuals have a 1.9 to 5 times greater relative risk for mortality than those with social connections, and communities with greater social capital have lower rates of homicide and overall mortality. City planning can help improve the health of the community by providing areas for social interaction such as parks, plazas, and spaces for farmers markets.

¹⁰ Social capital is generally understood as “the ways in which a community builds capacity for action: through increased and strengthened network connections between individuals” (Middlemiss, 2010: 7560)

our society. The belief that we need to compete for scarce resources has led us down a deadly path. We mustn't let fear, despair, or guilt trap us within our current state of crisis, and we must question common sense to change the stories we tell ourselves about the world and our own values. Through an ecological lens we are part of nature, everything is connected, there are no parts only participants, and separateness is an illusion because everything is mutually created and changing. An ecological mind thinks in systems and realizes all of our crises are inter-related. Globalization has made it so humans change the world every day. It is our decision whether we want to change the world for the better or continue down the path of production, destruction, and consumption (Lappe, 2011: 193). Sustainability is in itself gratifying to pursue because it is linked to intrinsic goals like self-acceptance, connection to others and nature, and positive social involvement (Pilon, 2010: 27). This is something to consider when developing a community.

3. Transition Towns: A Model of Change

Climate change and the economic crisis can be overwhelming to think about and seem like daunting issues to try to address, but it is important that we change our perception of our situation and stop thinking about sustainable measures as a loss. If we imagine sustainable behavior as a transition to a better place that has clean air and water, plentiful healthy food, and a sense of community and celebration of life, then the movement toward a sustainable future is not daunting; it is inviting. This is the view of Transition Towns. Humans are creative, intelligent, and social creatures capable of achieving amazing feats. If we use our ingenuity productively and align ourselves within an ecological perspective, then we can plan and act to unleash the collective genius of our communities to create a bright and fulfilling future in which people take care of each other, future generations, and the earth (Hopkins, 2011). The Transition movement transmutes our environmental, economic, and social problems into opportunities for positive change (Hopkins, 2011).

Transition Towns are a collaborative community-led response to climate change and the global economic crisis. The original question and goal of transition was: how can our community respond to the challenges and opportunities of peak oil and climate change? Since the start of the Transition movement the view on peak oil has changed. In 2005 it was believed that we had reached peak oil, but we will not run out of fossil fuels any time soon thanks to the fossil fuel companies who are using more environmentally destructive methods like ocean drilling and hydraulic fracturing (fracking) to obtain and maintain their fossil fuel supplies. The 2010 BP Deepwater Horizon oil spill in the Gulf Coast was one of the worst environmental disasters in the United States and awakened

the public to the dangers of offshore drilling and lack of responsibility of oil and gas companies. Oil companies have found ways around the issue of peak oil by investing their accumulated capital in new shale gas technology. However, these technologies are extremely dangerous to humans and the environment. Fracking is one of the most heinous forms of resource extraction. It requires a massive amount of water, roughly four to six million gallons per gas well, to obtain natural gas from shale rock and contaminates rivers and groundwater with methane that has reached water supplies in great enough concentration for water supplies to be lit on fire (Galbraith, 2013)¹¹. It also leaks methane, a natural GHG 25 time more potent than carbon dioxide, into the atmosphere and is so far unregulated by state and federal governments because the industry has grown so quickly (Inman, 2012). Even though peak oil is not a threat, the way in which we obtain oil and gas is an even greater threat to the health and safety of humans and the environment.

Fossil fuels are also an issue because even though we have found new ways to get more, this doesn't mean we can afford to burn all the oil and natural gas that we find because there is a limit to how much carbon dioxide and methane we can put into our atmosphere. The carbon cycle follows a non-linear positive feed loop. This means that when carbon dioxide concentrations increase, the earth warms and reduces terrestrial and ocean uptake of atmospheric carbon dioxide. Reduced uptake of carbon dioxide increases atmospheric carbon dioxide concentrations and creates even greater climate

¹¹ In this chilling report on fracking and its irresponsible use of water, Galbraith concludes, "Some have big dreams for technology." She covers discussions by oil and gas companies on ways to increase the amount of recycled water they use to extract oil and gas. The ending comments are frightening because they anthropomorphize fracking technology and lead the reader to think that fracking will someday be sustainable and eventually "be a net producer of water rather than a net user" (Galbraith, 2013). The negative environmental impact, though briefly mentioned in the article, is lost among the proposal of fracking being a leading technology of the future, and oil and gas companies providing us with water.

change (IPCC, 2007). Climate change is unpredictable, but mitigating its effects is crucial. The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report: Climate Change 2007, shows that “eleven of the last twelve years (1995-2006) rank among the twelve warmest years in the instrumental record of global surface temperature (since 1850)” with the global temperature increasing between 0.15 and 0.3°C every decade from 1990 to 2005 (IPCC, 2007). We are already experiencing extreme weather patterns and there is only so much carbon dioxide that the atmosphere can handle. The idea of peak oil has been transformed into the idea of peak carbon dioxide. We cannot afford to continue using the same amount of fossil fuels because the earth and our atmosphere will become increasingly unstable and weather will become increasingly destructive.

Climate change has made many people aware that our social-ecological and economic systems are detrimental to the planet and humans. Transition goes beyond just addressing climate change and energy issues because our lack of cheap energy is not the problem; it is the result of a much more fundamental problem, the way in which humans relate to each other and to their environment. Even if we find a miracle energy source that creates energy without any external costs, we will not have found an answer to social and economic inequality, other forms of environmental degradation, and poor health statuses. We will still be left with a society that does not value equality, the environment, and the well-being of all individuals. Transition’s goal of a resilient community means the goal is increased well-being regardless of whether the community faces major challenges from the adverse effects of climate change. Climate change has awakened individuals to the reality of our flawed systems and individualistic ways of thinking.

Transition uses this as an opportunity to create real changes in people's lives for a better more resilient future.

Transition frames a low-energy economy in a positive light because it is more than just reducing energy and increasing sustainability-it is a cultural shift along the spectrum of values to a lifestyle filled by activities of intrinsic value. Transition is a shift in what we do, how we do it, and why we do it (Hopkins, 2011). The seven principles of Transition are as follows:

- Create positive, clear, practical visions of a community to reduce its dependency on fossil fuels by focusing on opportunities and not campaigning against current problems;
- Raise awareness of peak oil, climate changes, and unsustainable economic growth with clear information and possible solutions, so people are not overwhelmed, believe change is possible, and can make well informed decisions;
- Be inclusive and open to local businesses, other community initiatives, and local authorities;
- Share and network insights, failures, successes, and ideas to create a Global Transition network and to build a collective experience;
- Build resilience through re-localization of food and businesses;
- Focus on an inner personal Transition to aid outer Transition; and
- Do not centralize decision-making, reflect natural self-organizing systems and allow for everyone to be involved at the most appropriate level (Hopkins, 2011: 77-8).

The transition movement is a social, technological, and behavioral transition towards sustainability in our modern industrial society (Hexaltine & Seyfang, 2009).

Transition is based on grassroots innovations, which include initiatives for sustainability that are community led and value driven. New socio-economic arrangements are created in response to local problems and are a form of social innovation. The transition network identifies new social and economic systems as more desirable than new technologies that emerge from the dominant system of business-as-usual consumerism because it is not the technology that is the problem, but the way in which technology has changed our relationships between each other and the earth (Hexaltine & Seyfang, 2009). Technology

changes what we do, but more importantly technology changes who we are. Technology changes how we experience the world and how we connect to others and the environment (Shepherd, 2010). We cannot rely on technology to save the earth and our future because technology is not the problem. How we experience the world is the problem.

Solutions based solely on technology often disregard their social, cultural, and environmental impact because they take the focus away from being and put the emphasis on doing (Pilon, 2010). Production is not a problem; the way we produce is. We need to move from our current system reliant upon technological solutions of efficiency to an alternative system based on the principles of resilient systems and concerned with the well being of humans and the environment. Business models need to focus on a triple bottom-line line of economic, social, and environmental sustainability, rather than just focusing on an economic bottom-line. If well-being for all people and the environment becomes the primary technological goal, then technology will have sustainable and regenerative designs that mirror nature. The transition movement is not against technological advancements to improve sustainability, but they believe that improvements in technology will not be enough to create significant social or economic change; they must be accompanied by behavioral changes. So, how do we get to a point where our technology and our economy reflect and promote sustainable lifestyles?

Nature has already discovered how to create resilient systems. Why not learn from nature? Transition uses Permaculture as a practice as well as a model. Permaculture was one of the creative responses to the oil crisis in the 1970's and was originally sustainable or 'permanent agriculture' using an "integrated, evolving system of perennial or self-perpetuating plant and animal species useful to man" (Holmgren, 2007:

3). Today permaculture is now referred to as ‘sustainable or permanent culture’ and is defined as “consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre, and energy for provision of local needs” (Holgren, 2007: 3). Permaculture is about reducing the amount of energy humans use, so human needs can be met within the ecological limits. For energy descent, permaculture looks to pre-industrial times to learn how people lived with less energy, and uses knowledge of the past to integrate ideas and find ways of utilizing human capabilities.

The emphasis is on human innovation, not technological innovation. Permaculture is a useful model because it helps create beneficial relationships with actors that already exist. There is no need for a complete restructuring of society. The pieces are already there; they just need to be reassembled to maximize the beneficial relationships within our socio-economic system. Innovation on a local scale usually means that there are fewer funds to create large products or invention, so social and collaborative innovation become key factors in the development of a resilient society. The socio-economic system is rearranged so more people prosper. In the transition to a low-carbon future, everyone is considered a viable and important part of the entire system or town.

The goal is a harmonious relationship between individuals and between individuals and their environment. Land and nature stewardship is the foundation of permaculture ethics and design principles¹². This acknowledges that all domains of sustainability need to stem from responsibility on a personal level and a continuous

¹² The twelve principles of permaculture are: observe and interact, catch and store energy, obtain a yield, apply self-regulation and accept feedback, use and value renewable resources and services, produce no waste, design from patterns to details, integrate rather than segregate, use small and slow solutions, use and value diversity, use edges and value the marginal, and creatively use and respond to change (Holgren, 2007).

interaction with the constantly changing environment¹³. Principle 12 of permaculture is “creatively use and respond to change” (Holmgren, 2007: 21). This principle highlights the two faces of change, the proactive use of change, and the defensive response to change. As I mentioned before, living systems function in a transitional phase between order and chaos. This means there must be a balance between stability and change for a system to sustain its function when dealing with a disturbance that increases disorder, but the system must also be flexible in order to create change and continue evolving. A system must be durable and flexible to be resilient.

Creating Resilient Communities

The transition concept is framed around the goal of resilience in hope that a resilient community will be able to meet our needs as human beings and decrease inequality. At first it was thought that resilience was simply the ability to absorb shock and maintain status quo. Now resilience is seen as the ability of a system to adapt and innovate, to renew organization and development. Sustainability is not enough because the status quo is not enough to protect the environment and the earth. It helps to cut carbon emissions, but it is more beneficial to create value-laden sustainable policies from the resilience perspective. Policies created with the resilience of a community in mind will naturally benefit more people and create a culture of transition.

The Transition Handbook: From Oil Dependency to Local Resilience was published in 2008, two years after the ‘unleashing’ of Transition Town Totnes. It was created because communities wanted a comprehensive overview of the transition process, so they could start their own communities on the road to transition. Transition took

¹³ The seven domains of the permaculture flower include: land and nature stewardship, built environment, tools and technology, culture and education, healthy and spiritual wellbeing, finances and economics, and land tenure and community (Holmgren, 2007).

resilience thinking from research on ecosystems and created a transition model of community resilience. The degree of a community's resilience is determined by three factors: a community's ability to manage resources and self-organize in order to make decisions that promote sustainability, a community's ability to acquire new skills and knowledge in order to adapt, and a community's intention of taking a collective approach to become resilient (Hopkins, 2011). Transition identifies diversity, modularity and tightness of feedback as the three main ingredients of a resilient ecosystem that help a system reorganize itself after adversity.

Diversity refers to the number of different elements that make up a particular system and the connections between those elements. A diverse system has more ways to respond and adapt to disturbances (Hopkins, 2008). An emphasis on diversity also allows a community to develop its collective creative genius by fostering experimentation and being open to all cultures, so communities can address challenges according to the capacity of community members and availability of local resources (Scott-Cato & Hillier, 2010). Transition values have multiple perspectives involved in the transition process. Towns can be enriched by different cultures if they embrace differences and monitor inequality (Hopkins, 2011). It is important to have a diverse economy, so there must be an emphasis on diversifying functions of a settlement, diversity in available responses to a crisis, and diversity of land-use. Transition towns throughout the world are naturally diverse because each region has different resources (natural resources, people, skills) and can create for itself different solutions (Hopkins, 2008).

Creating more options is better than constraining options to become more efficient (Walker & Salt, 2006). Optimizing efficiency in one area such as fossil fuels

has made it difficult for nations like the United States to expand their energy sources because so many companies have already invested in fossil fuels and do not find it financially beneficial to expand into renewable energy. Transition necessitates a critical evaluation of the “givens” of our current system. There is not one solution to all of our problems and moving outside of the business-as-usual perspective may bring a new awareness to our social, environmental, and economic problems. This will come from having a variety of people and ideas. It is important that Transition initiatives reflect the greatest range of voices and experiences of the community.

Modularity refers to the way in which the components of a system are linked. A more modular system has more internal connections, which reduces vulnerability to disruptions of wider networks, and allows for more effective self-organization after a shock. The Transition model encourages local food systems and local investments that create a system based on networking and information sharing between small networks around the world rather than dependence on one industry. Tightness of feedbacks refers to the rate at which one part of a system can respond to other parts of a system.

Globalization has created systems in which feedback and change are slow. Systems that are more localized have shorter feedback loops, so the consequences of actions will be closer, more obvious, and can be addressed more quickly.

Transition’s idea of a resilient community is based on the saying “Think Global, Act Local.” Transition works towards relocalization, “the process by which a region, county, city or even neighborhoods frees itself from an overdependence on the global economy and invests its own resources to produce a significant portion of good, services, food and energy it consumes from its local endowment of financial, natural and human

capital” (Hopkins, 2008). Many Transition towns focus on food as the first step towards localization (Scott-Cato & Hillier, 2010). The local scale is recognized as the most sustainable scale of living and gives power back to communities because localization offers greater economic security and resilience than relying on oil-vulnerable national and multinational businesses (Hopkins, 2008; 2011). Localization decreases a town’s dependency on oil because there is less transportation of goods. Transition believes that the end of oil is inevitable because we cannot afford to continue burning fossil fuels and releasing carbon dioxide into the atmosphere. Transition takes the stance that it is better to decrease dependency on oil now and transition into a more local economy instead of dealing with the unexpected shock of not being able to use oil in the future (Hopkins, 2008).

The Transition Companion: Making your community more resilient in uncertain times, a 2011 publication of the Transition movement thus far, makes very clear that localization is not just about romanticizing the past and does not mean that communities are closed off from the rest of the world or reject progress of science and modern medicine. Localization works to combine the best from the old ways and the new ways to create the most appropriate responses to challenges that a community faces. Localization is about meeting local needs through local production whenever possible and using renewable energy. Communities are not isolated from the rest of the world; trade and communication still exist, but in low-carbon ways (Hopkins, 2011).

Inner Transition and Inner Resilience

A whole systems approach is necessary to transition to a more resilient community; this change does not happen overnight. There must be an ethical or spiritual component of transition, so there can be an ethical ground from which to build policies in a community (Pilon, 2010: 27). This is why inner transition, changing our beliefs and worldviews, must accompany the outer physical transformations. Actions within a community that lead to lower green house gas emission, local organic food, water conservation, relocalization of the economy, increased social relationships, greater cooperation, and equity will be difficult to attain or maintain if the community does not believe that these actions are beneficial to themselves and the world. This is why Transition also focuses on inner resilience as well as a personal transition.

Personal resilience refers to the well-being of the individuals and can be increased by the following: “having basic needs met and being financially resourced; eating a healthy diet and taking regular exercise; spending time in nature, feeling seen and appreciated for what we offer; feeling connected – to a partner, family, friends, colleagues and the community, and knowing that people will treat us with respect and care; feeling able to effect change and make a difference” (Hopkins, 2011: 182). The transition process aims to increase all of these factors by working with others to achieve goals and projects, localizing food production to receive fresh healthy food, and building a sense of community. In our current society we often ignore warning signs from our body and push our bodies past their capacity to cope. This is when we get sick. We expose ourselves to conditions that are beyond our coping capacity. Recognizing when we are stressed out, irritable, depressed, hopeless, and exhausted is part of the feedback

loop in system (Hopkins, 2011). The more conscious we are of the information our body is telling us, the better we are at responding appropriately. Transition explains that the lack of conscious awareness of limits and disordered priorities in our lives echoes the lack of awareness and concern of warning signs in the world like climate change, environmental degradation, and increased amount of non-communicable diseases. Transition stresses looking after individuals' well-being during the transition process because there are times when obstacles to change may create emotional and physical exhaustion. Individuals must take care of their body, mind, and spirit in order to maintain the capacity to change.

The transtheoretical model, also known as the Stages of Change model, a behavior change model from psychology, is included in the *Transition Handbook* to inform individuals about how change occurs in humans¹⁴. The model addresses barriers to change and ways to motivate changes, so individuals can better understand the ups and downs involved in changing a certain behavior or lifestyle. It is important that individuals involved in Transition understand the steps of change because it is important to realize that change does not happen over night (Taylor, 2012). There is a process individuals must go through in order to change the way they think about themselves and their relationship to other people and the world. It is crucial for individuals involved in Transition to realize that changes in their own behavior may take time and even more

¹⁴ Psychologists J. O. Prochaska and his associates originally developed the transtheoretical model of behavior change for addictive disorders as a way to better understand the struggles and effective interventions at each stage of behavior change. The different stages of behavior change according to this model are pre-contemplation (unaware of problem or not considering change), contemplation (aware of problem and considering change), preparation (prepare to make specific changes), action (commit time and effort to make planned changes), maintenance and relapse (practice new skills and behavior to sustain change). This model acknowledges that relapse is part of the process, so individuals do not become discouraged when they do relapse. Every individual moves through each stage of change differently (Taylor, 2012).

importantly that others must go through their own pre-contemplation and contemplation stages before they even prepare to take action.

Our situation right now is daunting, but it is helpful to remember that positive changes we make in our own lives have some impact on the future even if we do not see the direct results on a large scale. Positive envisioning is a crucial tool to help create a resilient community because it supplies individuals with a positive goal for the future to help direct their actions toward positive change instead of fighting negative feelings (Koger & Winter, 2010). Hope drives Transition; helplessness and fear stifles change. The Transition movement would not exist if people truly believed that nothing could be done about our current environmental, economic, and social situations. At this point in time it is impossible to deny that climate change is happening, but it is easy to be fearful about the future. Inspiration is just as important as education. Framing the current economic and environmental crises as challenges presents individuals with a mindset that change is possible. One inspiration for change comes from the idea that if these challenges are met with initiatives that are developed with conscious designs, then the future lifestyle of cooperation and collaboration will create a better society that protects the earth and promotes both individual and collective well being. Documentaries like “The Economics of Happiness” provide "not just a feel-good hope," Michael Levy from Transition Santa Cruz explains, "but a hope that's based on getting a deeper understanding of what our predicament is and what a positive direction out of that predicament is. It's the same as what we're trying to do with the Transition movement in general. Not just cheer people up, but give them an accurate picture of what's going on and give them some workable solutions" (Dayton, 2011).

Expanding the Transition Idea

Transition is a whole systems approach that relies on the creative, collaborative, and critical intelligence of transition culture to address social, economic, and behavioral change (Pilon, 2010). The Transition movement is created through existential mutation, which means it has no predetermined solutions and is able to continually evolve. This has allowed Transition Towns to emerge from different cultures across the entire world. Communities mulling over the idea of Transition have many resources available to them online and in the *Transition Handbook* and *Transition Companion*. These resources provide helpful guidelines and a general framework that communities can follow, but these are only examples of projects and sequences of action that have worked in some towns; they are not rules that must be followed. Rather, they are suggestions to be adapted by each individual community. There are many roads to transition.

Spreading the idea of transition has been a new productive development in the environmental movement because it creates a space for the development of new sustainable ideas and practices that reflect the community's values and address both environmental and social problems. The spread of transition was not and is not pushed by the Transition Network. Transition has spread across the world because it has been successful at improving people's lives, lowering carbon emissions, reducing waste, and strengthening communities. Transition organically emerges in communities whose members share the common value of compassion and want to adopt the transition model as a way to make changes (Scott-Cato & Hillier, 2010).

Improvements in one community may seem small in the face of the larger world problem of climate change, but change is what is important. Transition focuses on taking

action and making changes on a scale that is manageable within a community. The transition movement gives people a place to create changes that they want to see in their community by making the transition process adaptable to place and scale. Resilience theory is about understanding thresholds and recognizing when a system is on the brink of destruction. The transition idea was created because people realized that the business-as-usual approach to our socio-economic-environmental system is not sustainable and will eventually result in catastrophic climate change and the degradation of the earth. Creating resilient communities may be what is needed to save humans from entering the release phase and suffering a catastrophic collapse. The adaptive cycle operates on all scales. The release phase of a larger system like the world may be prevented by the release and reorganization of systems on smaller scales. Larger systems are more difficult to change because connections are tighter and there is more capital accumulated in one area, but reorganization on the smaller scale of a community is possible.

Localization creates a local economy and restructures communities with the goal of equity and opportunity for all members of the community. Transition recognized the direction in which optimization has taken society and found ways to make food, energy, and economic systems more diverse, so communities could better withstand shocks from climate change, fluctuating energy prices, and food shortages. With recognition of how socio-environmental systems work, transition is able to increase the resiliency of communities by reorganizing the structures within a society before they have to go through the destructive release phase. Individual human and economic capital is voluntarily freed up in order to strengthen the social, human, and economic capital of the entire community. This reorganization of resources and capital allows a town to change

its identity and tell a new story. This new identity allows a community to unfold into a place where people can flourish as ecological beings.

The Transition model focuses on local energy generation, local currencies, local businesses, local food production with Community Supported Agriculture (CSA)¹⁵ and farmer's markets, community garden shares, cooperative food businesses, composting, seed swaps, food forests, wild food foraging, re-skilling, tool-sharing, education, reducing waste, personal development, car-sharing and bicycling, recycling and repair projects, energy descent action plans (EDAP)¹⁶, and many similar activities. These practices are in no way radical. These are practical changes and activities that are attainable at small and local scales. Taking action, creating changes in the community, and experiencing positive results not only strengthen the community, but also positively empower individuals and increase their self-determination and self-efficacy. Transition aims to strengthen inner resilience as well as community resilience. These practical activities also embrace social learning and have a large positive impact on others and the environment. These activities promote community building and work towards satisfying the four human needs identified by psychologist Tim Kasser: safety, security, and sustenance; competence, efficacy, and self-esteem; connectedness, and autonomy and authenticity (Hopkins, 2011: 69). The Transition movement works to create opportunity for people who have been marginalized in the present formal economy. An alternative local economy in a Transition town creates sustainable livelihoods for manual workers,

¹⁵ CSA is “an alternative food distribution option where customers sign up to receive “farm shares” or a weekly selection of produce available fresh from the farm they contract with that week. CSAs usually consist of a weekly delivery or pick-up of a pre-set quantity of vegetable, fruit or other farm grown goods based on current availability” (Sustainable Santa Cruz, 2012)

¹⁶ Energy Descent Action Plans (EDAPs) are a key part of transitioning to a low-carbon future. EDAPs differ depending on the context of the town, but in general they are “a detailed timeline for decarbonization and localization of food, energy, housing, education and much more” (Hopkins, 2011: 236)

the less literate, the young with a stake in the future, and the old with knowledge of past frugal ways. A local economy increases social equality and creates a new sustainable social order because more people are included and valued. (Scott-Cato & Hillier, 2010: 881-2). Collective community actions are the quickest and best ways to make positive change because human-scale development focuses on satisfying fundamental human needs of food, shelter, clothing, education, security, and health care. National governments appear inadequate for providing these fundamental needs, so it is up to the communities who operate on a human-scale to provide for people (Pilon, 2010).

It is impossible to define transition fully because it is unique to each community and is constantly redefined with every experience of the transition. The Transition Network did not intend to start this world-wide network of communities, but there is now an official process of becoming a Transition Town and becoming part of the network. Transition has been effective throughout the world because it is not a campaign against anything; it is about leading by example and getting down to work at making practical changes for the community to use less energy and reduce green house gases. Transition provides a tool to transform issues into opportunities, to have a local economy that reflects the values of the community. Transition is a cultural shift to a new set of values that establishes a local economy to support fulfilling sustainable livelihoods in the community. Transition is a way for individuals to collaborate and create more resilient communities (Hopkins, 2011).

The Transition movement exists because we face cultural, economic, and social crises and “if we wait for the governments, it’ll be too little, too late; if we act as individuals, it’ll be too little; but if we act as communities, it might just be enough, just in

time” (Hopkins, 2011). Transition creates awareness about climate change, prepare themselves with skills and knowledge, and then take collective action towards a low-energy lifestyle based on local and diverse economies. The Transition journey is both an inner and outer process because “we shape our physical world by what we value and believe, and our values and beliefs are shaped by the world around us” (Hopkins, 2011). Transition focuses on positive envisioning and hope, but it also gives communities the framework through which to implement practical change. Transition strives to help individuals and communities increase their agency in the environmental movement, but Transition is more than an environmental movement; it is a cultural movement. Physical and material changes are not enough; they must be accompanied by significant social and behavioral change in order to create an ethical and spiritual foundation upon which sustained change can be built.

Rob Hopkins compares Transition to the miccorhizal fungi because the fungi build networks underneath the ground, keep the soil together, increase the amount of nutrients plants absorb, collect water, recycle debris, replenish soil, and warn the entire ecosystem when pests and disease are going to attack. The fungi and Transition are both under the surface networks that silently strengthen the environment to be more resilient with increased communication and resources for the system. And often these two go unnoticed because the miccorhizae are underground inoculating new areas and not always making noticeable changes on the surface, but connecting all parts of the system to create a more stable ecosystem. The Transition movement is different from many other environmental movements because it is not campaigning against anything; it is just

promoting a healthier more sustainable lifestyle with community action, and supporting areas that are ready for change.

Transition is spreading all over the world and cannot be controlled or predicted because communities want to inoculate the change in their community and become more resilient in their own creative ways (Hopkins, 2013). TTT has shown that a more localized and resilient life creates a better quality of life, which everyone in the community can enjoy. Rob Hopkins describes climate change as an opportunity to be brilliant, to be innovators on making different aspects of life more sustainable. It is a story to change the world and communities should be excited that they are part of a historic process of community action on a global scale.

4. Transition Town Totnes: The Story of Change

Transition Town Totnes (TTT) in Devon, England was the first of what are now 446 official and 635 mulling Transition communities in 43 countries throughout the world¹⁷. The Town of Totnes is located in the south of England, has a population of about 8,000 and a reputation for being an alternative ‘Narnia-like’ town. Citizens of Totnes created TTT because they believe the world is nearing the end of cheap energy and want to prepare themselves and their community for a future with less energy. What they have found is that collaborating with their neighbors to become more energy efficient and localize the economy strengthened their sense of community and made everyone happier. TTT started as a project to address climate change, but ended up increasing the well-being and social capital of the community while decreasing the carbon footprint of the community and therefore increasing the well-being of other people around the world.

TTT was modeled after the “Kinsale 2021: an Energy Descent Action Plan” (EDAP). This was a project developed by permaculture Professor Rob Hopkins and his students at a college in Kinsale, Ireland (Hopkins, 2011). The Transition Network was created shortly after the unleashing of TTT and is associated with Rob Hopkins¹⁸. The Transition Town Network considers transition a social experiment because there are no specific rules to transition and each town adapts the transition principles and ideas to pioneer their own transition trail. The Transition model is continually evolving, created

¹⁷ According to the Transition Network, as of March 2013 there are 1095 initiatives registered.

¹⁸ The ‘unleashing’ of a Transition Town is “a celebration of place, history, and the potential of a low-carbon, post-oil future” (Hopkins, 2011: 184). It is often seen as the official beginning or launch of a transition town. Transition suggests that a community throws an unleashing when awareness raising from the transition group has influenced a significant number of people in the town and there is a buzz around transition (Hopkins, 2011).

completely from learning by doing. Rob Hopkins explains transition as a “do-ocracy,” The people who are doing things are the people who are in charge (Hopkins, 2012).

The area around Totnes is known as a creative center for arts, music, and theatre and attracts alternative people and environmentalists. TTT started raising awareness in October 2005 with screenings of films and talks from educators on peak oil and climate change. From the start, TTT networked with already established local initiatives to gather as much support from the community as possible. In September of 2006 TTT held their official unleashing. This included talks from Rob Hopkins and Dr. Chris Johnstone on peak oil and relocalization. They also gave insights into EDAPs from the view of addiction. We have become so reliant on oil to fuel our lives and our economy that our dependency on oil is like an addiction. An EDAP helps communities slowly become less dependent on cheap, harmful, and unreliable sources of energy. Afterwards there were discussions among people in the audience about their concerns about climate change, their visions for the future of Totnes, and possible steps that they could take toward those visions. TTT took off after the unleashing and quickly created working groups like nut-tree planting. There are now 150 trees that are being harvested.

TTT created the Totnes Pound, which is the official local currency of Totnes. Creating a local currency ensures that money is spent in local shops and stays within the community because the Totnes Pound has no value outside of Totnes. Transition adopted the New Economics Foundation (NEF) concept of the ‘leaky bucket.’ If we think of the local economy as a bucket full of money from salaries, pensions, grants, and spending in a town, then the chain super-markets and stores, transnational banks, and imported goods are the companies that drill holes in the bucket and leak money out from the local

economy (Hopkins, 2011). The idea is that if more individuals shop at local businesses then more money circulates through the community because the profits are not going to large chain businesses and corporations, but are in the hands of local workers and entrepreneurs who are more likely to reinvest their money in the local economy. TTT also created a Local Food Directory to guide people to local shops. Other projects created by TTT include: co-housing for affordable housing, eco-homes and eco-gardens for education, and garden-shares to help people who don't have the space, but want to garden meet people who have open land or garden plots (Hopkins, 2008). In 2011, TTT was given an Ashden Award for Sustainable Energy for its success with behavior change through their Transition Streets project and the one million pounds they brought into the town with sustainable measures¹⁹. The name Transition Town Totnes has spread throughout the world as a model of public action for solutions to climate change (Ashden, 2011).

Transition has been so successful because it is able to answer one of the most difficult questions of climate change action; How do we deal with an individual's disconnect between awareness and action? One of their most successful behavior change projects so far is Transition Streets. Transition Streets originated out of Totnes and is a model for transitioning on a street-by-street level. Five to ten households, who live on the same street or nearby, meet and teach themselves through a workbook of seven sessions. Groups decide to meet regularly on a weekly or biweekly basis to cover the seven different topics. These sessions include: getting started and getting to know each other; how to spend less on energy by understanding how to measure energy and use less

¹⁹ The Ashden Award for Sustainable Energy is given to projects in the United Kingdom that find practical solutions to climate change with low-carbon schemes.

of it; how to spend less on water by learning everywhere that water is used and how to conserve it; how to spend less money on food, avoid waste and eat a low-carbon diet while still eating good and delicious food; how to avoid waste, recycle more, and set-up and use composting; best ways to utilize alternative modes of transportation besides a car; and an evaluation of the program and any other steps the group wants to take.

Participants measure and keep track of their progress each week in order to see the changes and saving they have made from before and after the program.

Fifty-six groups participated in Totnes with a total of 468 plus households. Transition was effective in lowering energy, water, food, and transportation costs, as well as reducing carbon emissions. On average each household saved £570 and 1.3 tons of carbon. In the town there was a total savings of £273,600 and 576 tons of carbon²⁰. Positive results did not stop there. People were not only happy about saving money and reducing their carbon footprint, they were also excited that they had gotten to know their neighbors and formed a community. Since Transition is about adapting to specific locations and contexts, other transition groups have adapted Transition Streets for behavior change in different or more specific areas of interest, like 'Footpaths', focusing

²⁰ Between January 2010 and July 2011, 468 households formed 56 groups and participated in the Transition Streets project. The project involved solar energy installations with 141 domestic solar PV systems and 14 kWp PV systems installed on Civic Hall. The project cost £75 per household and £1 million were brought into the local economy. Solar PV systems were discounted with a local retailer and grants were provided for low-income households, but only after the households had completed basic energy efficiency measures on their home. The project started in September 2008 with £12,500 from the Calouste Gulbenkian Foundation. This money was used to create workbooks and pilot groups. After the pilot programs were successful with behavior change, NESTA's Big Green Challenge Plus awarded Transition Streets £20,000 in September 2009 to help start Transition Street projects in other Transition Towns. Success of the project may have been due to the increased financial support, but the major success of the project was not financial. Behavior change was the main goals of the project and there were many positive results for the participants, including: 83% made improvements to their home with 10% claimed they had done as many improvements as possible, 86% made behavioral changes with the rest already engaged in the desired behaviors before the project, 90% said their behavioral changes would be Very Easy or Somewhat Easy to sustain, and 85% think benefits of the project will last for over a year (Ward, Porter & Popham, 2011).

more on reducing carbon footprint, and ‘Transition Circles’, a meeting group in more urban areas for discussion on individual behavior change in regards to sustainability.

Transition Streets was effective because it worked as a support group for individual behavior change. At each meeting, people checked in with each other on how much they were saving in each category. Holding each other accountable created enough pressure to keep individuals on track to make and sustain changes. This sort of group behavior change is used in other sustainable projects like David Gershon’s Global Action Plan (GAP). His book outlines how to create neighborhood Earth EcoTeams and it divides household improvements into five areas: solid waste, energy, water, transportation and purchasing. A one-page recipe for each outlines the time and materials required, the resources saved, a number indicating its difficulty and a playful cartoon illustration. The important component of Transition Streets and the GAP is the group dynamic. Working within an intimate group is helpful for creating behavior change because “what actually motivated people to change was witnessing and engaging with other people who were changing in front of their eyes” (Gershon, 2012). This is a form of modeling or learning by seeing another person perform a behavior. Seeing someone to whom we can relate who makes changes in his/her life helps motivate use to make changes ourselves (Taylor, 2012). It may just start on a small scale, but these sorts of projects show that change is possible.

Current Transition groups and projects in Totnes include TTT Arts Network (TTTAN); Transition Homes Community Land Trust, which is working to build low impact affordable housing for locals in need of homes; education, to help bring speakers to the town; food projects to help connect local restaurants to local farms, create seed

swap events, and transform unused public spaces to grow food; town walkways which provide edible landscapes that anyone in the town can enjoy as food; inner transition, support groups for those trying to make behavior changes, mentoring and well-being support; and skill-share projects to connect with others in the community and teach persona skills and knowledge to others.

After the success of TTT, other towns throughout the United Kingdom wanted to create change in their community, so *The Transition Handbook* was published in 2008 to help guide towns through their own Transition process (Hopkins, 2008). The Transition idea traveled to Australia and Transition Sunshine Coast became the 23rd official TT. Transition continued to spread throughout the United Kingdom, Australia, New Zealand, and finally came to the United States. The regional hub for the Transition Network in the United States is TransitionUS. In January of 2008, TransitionUS received funding from the Post Carbon Institute and a grant from a private investor (TransitionNetwork, 2012). The Post Carbon Institute (PCI) has been leading the transition to a more resilient, equitable, and sustainable world since its establishment in 2003 by providing resources about the interrelated economic, energy, environment, and equity crises that plague the United States and much of the world. The primary goals of the PCI are to build awareness and understanding about the true nature of the crisis at hand, foster collaboration and unprecedented cooperation, integrate knowledge to form an ecosystemic approach to solutions, and inspire practical action to build resilience and navigate the transition (Post Carbon Institute, 2012). Transition Colorado, established in Boulder County, was the first official Transition Town in the United States and now goes by the name Local Food Shift. Transition Santa Cruz (TSC) is the second TT in

California, the sixth in the United States, and the hundred and first in the world. There are now 112 official TTs in the United States and 29 in California.

5. Transition Santa Cruz: Pushing for Change

Santa Cruz is a beach, surf, skate, hiking, mountain biking, beach volleyball, sand-soccer, yoga, alternative medicine, and university town located on California's Central Coast. There are 59,946 residents in the city and 262,382 in the county²¹. According to Environment California Research & Policy Center, Santa Cruz is considered a mid-sized city because it has over 50,000 residents. It is located about 75 miles south of San Francisco on the northern edge of the Monterey Bay and is host to 29 miles of beaches for the 300 sunny days of the year. Five citizens of Santa Cruz initiated transition Santa Cruz (TSC) in 2008. Michael Levy brought the original TSC initiating group together and sought out individuals whom he thought would be interested and helpful to the process of setting up a vision for Transition in Santa Cruz. *The Transition Handbook* recommends having someone who practices permaculture in the initiating group to help facilitate the idea of resiliency and provide insight into permaculture as a design tool. Levy invited Ken Foster²², owner of Terra Nova Ecological Landscaping since 1988 and permaculture professor at Cabrillo College, to join the initiating group for TSC.

TSC was created because individuals wanted to establish a collaborative group to increase awareness of global and local issues, foster sustainability, and help build community in Santa Cruz to help the town prepare for a world where cheap abundant energy will no longer be available. TSC is “committed to exploring and creating concrete manifestations of positive visions of life after oil, by working at a grassroots level and unleashing the creative genius of our community” (TSC, 2012). There are two key ideas

²¹ Based on 2010 United States Census

²² Foster, K. personal communication, January 14, 2013

presented in this statement. A manifestation is an event, action, or object that clearly shows or embodies a theory or abstract idea. Transition is very much about manifesting our own reality; Transition strives to transform theory and discussions into tangible improvements in a community. Change on the national or state level is slow, so change on the local level must come from movement within the local level, if individuals want to see change any time soon. Change on the local level is about taking realistic and positive steps toward a better future with engagement from the community on projects of education as well as physical change. The second important idea is that TSC taps into the collective creative genius of the community in order to manifest a future in which everyone can thrive. Santa Cruz is a liberal and open community that embraces all people: scholars, artists, athletes, scientists, small business owners, dreamers, hippies, businessmen, farmers, DJs, entrepreneurs, chefs, students, acupuncturists, yogis, professors, fishermen, outdoor enthusiasts, lifeguards, musicians, burners, dancers, surfers, food lovers, pinecone lovers, bird-watchers, coffee-roasters, and tea vendors. Most locals are not too fond of tourists, even though tourists bring in most of the revenue for the town.

The TSC mission statement defines resilience as a community's ability to adapt to stress and thrive (TSC, 2012). It is not enough to withstand stresses. The dominant system currently withstands stresses, but it will not be able to sustain itself. TSC has chosen four core values to guide the town toward a resilient future:

- Relocalization: Developing local self-reliance in meeting human needs;
- Community regeneration: Reestablishing local interdependence and reclaiming power over our lives in our neighborhoods, communities, and workplaces;
- Sustainability: Meeting our needs without degrading the ecosystem for future generations;
- Equity: Meeting the needs of all (Transition, 2012).

The Transition concept is attractive because it is so open. Anyone who wants to be a part of Transition can join and is encouraged to do so. There is a suggested donation to join TSC, but payment can be in the form of volunteer hours. John David²³, a member of TSC and part of the economy working group, has observed that the people who are involved in TSC are passionate about the situation in the world. One of TSC's fun projects is the Grow Food Party Crew. It is a one-day event in which a group of people gather at someone's house to help them build garden beds, a chicken coop, solar ovens, or any other ecologically friendly home improvement that would be too difficult to do alone and too expensive to hire workers. The only thing the host is required to provide is lunch and music. The idea for the Grow Food Party Crew came from the permaculture design idea of maximizing beneficial relationships. It is a work exchange, but it is also about creating relationships between people and helping people start their own garden projects or other sustainable projects.

Ken Foster believes that TSC is necessary and useful to the community because it highlights the connections between social, economic, and environmental issues. TSC is concerned with the overall well-being of the community. Resilience thinking acknowledges the interconnectedness of issues and forces individuals to look at the bigger picture and issues as a whole. Santa Cruz is not short on local initiatives and volunteer-groups to help the community, but John David thinks that Santa Cruz has "Pet Cause Syndrome." Individuals and groups invest so much time and energy into their own issue and as a result, can't see the forest for the trees; "individuals must have a broader vision and see how they all connect, network the networks" (David, personal

²³ David, J. personal communication, January 4, 2013.

communication, January 4, 2013). As a volunteer group, TSC works to make connections between residents in Santa Cruz who want to work toward a better and more resilient future. Education and awareness are essential to transitioning a society into a new social and economic system. The TSC website is set-up to inform people about TSC and their events, but it is also a valuable resource for finding other local initiatives. TSC identifies and partners with other groups who advocate for family-sized organic farms and sustainability, work to increase food security, promote non-motorized vehicles, increase resilience in financially poorer communities, and re-localize the economy.

Participation within TSC is easy because it is an open and inclusive group that everyone is invited to join. Forming a community is one of the main goals of the transition, so there is a monthly potluck open to the community, where individuals can enjoy a delicious meal with friends and family. John David, who now helps lead the TSC economy working group first heard about TSC through the potlucks. He attended a few of the monthly potlucks held at the Live Oak Grange and was impressed by the great speakers, informative and moving documentaries, delicious homemade food, and the amazing community. The potlucks are social and educational. They are a time for recipe swaps, poetry, music, theatre and art, documentaries, networking and have also included workshops on neighborhood resilience and leadership (TransitionSC, 2012). The January Potluck included guest facilitator Cecile Andrews, who received her doctorate from Stanford University, publishes books on simplicity and sustainable movements, and teaches at the Stanford Health Improvement Program (Andrews, 2013). The goal of potlucks is to spread transition and the ideas of sustainability, simplicity, self-sufficiency, community, and hope.

Food

The Transition Network views transition as a way to strive for an equitable society, but members of TSC especially emphasize this goal because inequality is a major issue in Santa Cruz. There are a significant number of homeless people in Santa Cruz because the year round moderate coastal climate makes the area conducive to sleeping outside. TSC identifies the Homeless Garden Project (HGP) of Santa Cruz as an organization that is increasing the resiliency of Santa Cruz. The HGP provide homeless individuals with skill training to help them get jobs. The HGP consists of a CSA and their store, From Our Garden. A quarter of the income from the HGP goes towards training and employment programs that help individuals have a stable productive place in society (Homeless Garden Project, 2012). Programs that help homeless people learn skills, find jobs, and secure housing, save taxpayers money by decreasing emergency services and jail time. Supportive permanent housing increases an individual's quality of life and increases resilience within a community because it addresses the issue of homelessness with real solutions instead of merely spending money on temporary housing²⁴. The program is also beneficial to the community because the CSA supports local farming, connects the farmer to the consumer, increases social connections, and increases the collective well being of the town. Temporary placement is only a short-term solution to the problem of homelessness. Instead of just throwing money at a problem, the HGP provides people with skills training to improve their own lives.

Local food production has proven to be a difficult area for TSC to become involved in because there are already so many farmers markets and local food initiatives.

²⁴ A study by Michael R. Cousineau and Heather Lander from the University of Southern California found that the City of Los Angeles saved more than \$80,000 per year by placing four homeless people into permanent housing (Lewit, 2009).

The Santa Cruz Community Farmers Markets (SCCFM) has five farmers markets in Santa Cruz that host over 100 family farms and artisans. There are also 25 farms that participate in the Santa Cruz CSA Farm Share Programs and a substantial number of local grocery stores including: New Leaf Community Markets, Shoppers Corner Inc., Staff of Life, Food Bin & Herb Room, and Santa Cruz Local Foods (Santa Cruz Community Farmers Markets, 2012; Sustainable Santa Cruz, 2012). Santa Cruz Local Foods is the only 100% local food grocery store in Santa Cruz. All of their food is sourced from small and medium-sized organic farms within a 100 miles radius of Santa Cruz. They want to make it as easy as possible to get local organic food. Customers can shop online to choose the available food items they want and then select for either self-pick-up in one of the twelve locations or bike delivery to a home or office (Santa Cruz Local Foods, 2012).

However, in 2009 Transition Santa Cruz did host a food forum called “The Future of Our Local Food Systems,” which was co-sponsored by the following: California Certified Organic Farmers (CCOF), Center for Agroecology & Sustainable Food Systems (CASFS), Community Alliance with Family Farmers (CAFF), Ecological Farming Association (EFA), New Leaf Community Markets, and the Open Space Alliance (OSA)²⁵. This food forum brought together experts on sustainable agricultural and the public to discuss how to: make patterns of food resources more transparent, create and promote business models with a triple bottom line, grow food that is healthy for humans and the ecosystem, create food systems that support low income and marginalized groups, analyze the carrying capacity of the region’s food system and its impact on water,

²⁵ The Ecological Farming Association (EFA) is the Soquel based non-profit behind the annual EcoFarm Conference. The EFA works towards sustainable food systems with healthy and just farms to nurture communities and the environment by bring people together for education, alliance building and advocacy.

find ways to share facilities, assess the possibility of Santa Cruz being completely food secure with local food, and engage the next generation in caring about sustainable farming (Galarneau, 2009). The forum was about getting the public more involved in their local food systems and working to find ways to increase local food security.

The University of California Santa Cruz (UCSC) is located on the hill above Santa Cruz in the redwood forest and is host to about 18,000 undergraduate and graduate students. It is also host to the Center for Agroecology of Sustainable Food Systems, which has the 2-acre Alan Chadwick farm and a 25-acre farm dedicated to the research, education, training and public service for sustainable farming that exploits neither people nor resources. UCSC held the first conference for sustainable agriculture in 1985. Just one year later in 1986 California State legislature passed the Sustainable Agriculture Research and Education Act, which established the Sustainable Agriculture Research and Education Program for the California Universities and created the nation's largest agricultural land grant for universities. UCSC has had sustainable gardening practices at its campus since 1967 when master gardener Alan Chadwick practiced and taught organic farming at what was called the Garden Project. His way of caring for the soil by using compost and other organic fertilizers along with the use of raised beds has become standard practice for organic farmers (Allen & Brown, 2012). UCSC has helped establish Santa Cruz as more than just a surf and vacation town; it has helped it become a leader in sustainable agriculture and a hub for ecotourism and organic farming.

There are several institutions in Santa Cruz that work toward social and ecological sustainable food systems. The Organic Farming Research Foundation (OFRF) founded in 1990 is based in Santa Cruz and “cultivates organic research, education, and federal

policy that brings more farmers and acreage into organic production” (Organic Farming Research Foundation, 2012). The New Roots Institute is an experiential, interdisciplinary, educational and applied research center that focuses on preparing the next generation of farmers. It was founded by five PhD graduate students with backgrounds in environmental studies, Agroecology, and community ecology and operates at the Swanton Berry Farm in Davenport, just north of the City of Santa Cruz. Swanton Berry Farm, founded in 1983, is organically grown by union labor and makes the most delicious jams ever²⁶.

Food is obviously very important to Santa Cruz County. The area takes pride in their local foods and the local communities reap the benefits of having local delicious food. In Santa Cruz County there are 682 farms covering 47,489 acres and selling \$447,417,000 on the market; \$433,545,000 comes from crops sales, and \$13,872,000 comes from livestock sales²⁷. Santa Cruz is committed to helping create sustainable food systems and that means Santa Cruz take care of its farmers. The 33rd Annual EcoFarm conference, “EcoFarm: Feed the World You Want To Live In”, took place in Pacific Grove and is run each year by the Soquel-based Environmental Farming Association (EFA), EcoFarm started as 45 isolated farmers who came together to share information and “discovered a sense of place, solidarity and validation in their risky marginal idea”

²⁶ Swanton sells at local grocery stores, farmers’ markets in Santa Cruz and the Bay Area, and is open to the public to pick your own olallieberries, strawberries, and kiwis. I have never tasted better strawberries in my life. The store at the farm has jams, baked goods, lemonade, to-die-for berry ganache filled truffles, and free samples of the jams. The store operates on honor system payments and gives discounts to people who ride their bike to the store. The farm is a 30-minute drive along the coast north of Santa Cruz on Highway 1 heading towards San Francisco.

²⁷ According to the USDA 2007 Census of Agriculture, the top crops in Santa Cruz County are vegetables (16,619 acres), lettuce (10,277 acres), berries (5,651 acres), apples (2,398 acres), and brussel sprouts (1,222 acres and ranked #1 in the state of California). The top livestock in the area are colonies of bees (2,037), horses and ponies (1,132), cattle and calves (734), and goats (483). Farmers in the area are predominantly male (535 men to 147 women) and 422 are farmers as their primary profession.

(Limbach, 2013: 18). EcoFarm was the first conference of its kind in 1981 and is now the longest-running and largest sustainable farming conference in the Western region. The focus of this year's conference was on preparing farmers of tomorrow. The average age of a farmer in Santa Cruz farmer is 58 and the average American farmer is 57 (Limbach, 2012; USDA Census of Agriculture, 2007). There needs to be education and support for future farmers. In 2008, Congress passed a Farm Bill, which funds the Beginning Farmer and Rancher Development Program (BFRDP). The DFRDP recently gave the EFA, CASFS, CCOF, and CAFF \$665,000 to help new and low-income farmers in the Central Coast region by providing training programs. Money from the BFRDP grant has allowed EcoFarm to increase their fellowships and scholarships to the conference as well as create a year round mentor for beginning farmers in the region. Education and support for beginning farmers are extremely important because “28 percent of California's certified organic operations have been in production for less than 10 years” and these types of farms need all the help they can get in order to survive²⁸. It is also a place for farmers to meet other farmers, share ideas, and become part of the farming community. FarmLink, a Santa Cruz-based non-profit, is another resource for individuals who are interested in farming and know about soil, sustainable farming practices, and crop rotation, but need help with the business side of owning a farm. FarmLink helps farmers learn how to balance budgets, access capital, lease land, and learn how to manage a business (Limbach, 2013). Santa Cruz is investing in its future by investing in future farmers.

²⁸ “The USDA definition of a ‘beginning farmer’ is someone with 10 or fewer years experience operating a farm on his or her own” (Limbach, 2013: 14).

Slow Food Santa Cruz also partners with TSC. In November 2012, the two groups screened the documentary “The First Millimeter: Healing the Earth” to educate individuals on holistic soil management and the ways in which better agricultural practices can help reduce excess carbon dioxide emissions (Christopher Production, 2009). In August 2012, Slow Food Santa Cruz hosted a Santa Cruz Edible Gardens Tour, which featured 15 public and private properties throughout Santa Cruz to showcase local food growers, sustainable growing practices, educate children on where food comes from, and promote the planting of edible landscapes (Horgos, 2012)²⁹.

Economy

Agriculture is a major part of Santa Cruz’s economy, along with retail, accommodation and food services. The 981 retail institutions have an annual payroll of \$315,975,000 for 12,454 employees and the 657 accommodation and food service establishments have an annual payroll of \$148,792,000 for 9,774 employees. In 2007 a half dozen business owners joined together and created Think Local First to “promote and sustain economic vitality while preserving the unique character of Santa Cruz County.” Think Local First supports independent and locally owned businesses in Santa Cruz because it believes that buying from locally owned business helps the local economy and the entire community. Think Local First now has over 630 members that create Santa Cruz’s unique local economy. The five local Banks and credit unions of Santa Cruz are all part of Think Local First. This includes my local bank, Lighthouse Bank. Think Local First promotes local businesses by informing individuals on where

²⁹ Slow Food Santa Cruz is a local chapter of Slow Food USA, which promotes local organic sustainable farming and fair food systems. The Santa Cruz Edible Gardens Tour promotes the planting of edibles landscapes that both look and taste good. They hope to inspire more people to grow their own food (Horgos, 2012).

their money goes. According to research from the Business Alliance for Local Living Economies (BALLE), if an individual spends \$100 at a non-local business, \$57 leaves the local economy and only \$43 stays in the local economy. But if an individual spends \$100 at a local business, only \$32 leaves the local economy and the other \$68 stays in the local economy and can go toward wages, schools, the police, local business services, and social investment in the local economy. Localizing the economy works towards creating a local economy that is separate from the troubled national economy and is more resilient because it is less dependent on outside sources of goods and services that are reliant on transportation and oil (Think Local First, 2013).

Creating a local economy is important for the vitality of every community. In August, TSC sponsored and hosted slow money leader Marco Vangelisti for a workshop on Economics and Finance Curriculum for Activists and Engaged Citizens. The TSC website has an outline of the workshop for individuals who were not able to attend the event. There are links to videos, audio, and radio shows that help explain the current economic system including taxes, fiscal reforms, the banking system and alternatives to the current system. Access to information is important for citizens to make informed decisions when it comes to supporting certain businesses, voting, and taking action to localize the economy. Making changes to the current economic system is difficult because there are no set solutions on the best way to transition to a more local economy. Rick Longinotti³⁰, TSC member, believes the community must first articulate a vision for their city and the types of businesses and jobs they want to support, if they want the City of Santa Cruz to make real changes. This means that there must be a strong cultural

³⁰ Longinotti, R. personal communication, January 16, 2013

capacity that portrays certain values that they want to see in their business models and plans for the town like the triple bottom line of economic, social, and environmental sustainability. He noted that an important change toward becoming a more local economy and resilient community is to stop thinking about economic security only from an individual point of view. Santa Cruz must think as a community and make economic security for the entire community the priority. It is the hope that if economies are local, then they will be able to change the status quo in which jobs and the environment are in in opposition to each other.

Energy

On September 24, 2002 Governor Gray Davis signed Assembly Bill No. 117. This bill allows for the formation of Community Choice Aggregation (CCA) programs, local government-run electricity programs that are non-profit. CCA allows local communities the right to choose their preferred source of energy and transition toward lowering dependence on fossil fuels (California State Legislature, 2002). In May 2010 Marin County, located in the North San Francisco Bay Area, created the first CCA called Marin Clean Energy (MCE). MCE now provides the County of Marin clean renewable energy with billing and distribution through their original provider, the Pacific Gas & Electric Company (PG&E). MCE as the aggregator for Marin County procures energy from renewable sources and PG&E delivers the energy through the already existing power lines. Residents in Marin County didn't have to do anything to participate in MCE because the 2002 state legislation automatically switches residents to the MCE Light Green electrical service, where they receive at least 50 percent of its energy from renewable sources such as solar, wind, geothermal, hydro, and biomass. Residents can

opt out of MCE if they do not wish to pay the higher rates for energy, but the Light Green 50 percent renewable service from MCE costs residents less than the 20 percent renewable energy package from PG&E. MCE offers a Deep Green 100 percent renewable energy option, which costs an average \$5.40 more per month than the Light Green option (Marin Clean Energy, 2012). Other regions in California are following Marin in their push to protect the environment by creating their own CCA programs. The California Public Utilities Commission (CPUC) has also officially recognized CleanpowerSF as the Community Choice Aggregator for the city of San Francisco (CleanPowerSF, 2012). CCA programs are now also legal in Illinois, Massachusetts, New Jersey, Ohio and Rhode Island. CCA programs give consumers access to more affordable renewable energy and put local communities on track for energy independence. Marin Clean Energy does not own their renewable energy sources yet, but establishing itself as an aggregator makes it possible for it to raise capital and eventually buy its own renewable energy sources (Hoppin, 2012).

On December 5th, 2012 Shawn Marshall, founder of Local Energy Aggregation Network (LEAN) Energy US and a Mill Valley City Councilmember presented information about CCA to the Santa Cruz County Commission on the Environment. With capital from the CCA, Santa Cruz County would be able to contract with local solar companies like Allterra Solar³¹ to provide energy to the city, which would foster job growth (Pierce, 2012). This would be a large step to help Santa Cruz become energy self-

³¹ Allterra Solar is a local solar power company in Santa Cruz. Allterra Solar partnered with UC Santa Cruz Internship Project and studied the suitability of solar energy for 4,226 homes in the Seabright area and its impact on the local Santa Cruz economy. Results showed that 93% of the homes in the Seabright area would save money in the first year, savings would continue to increase over time, and 93.7 million dollars would be saved over 20-years. If all the homes in the study converted to solar energy, there would be 535,345 less tons of carbon dioxide produced over the next 25 years.

sufficient and reduce environmental impacts from energy consumption. Transitioning to local renewable energy makes sense for Santa Cruz because it is part of the southwestern United States, which has the highest solar radiation in the nation. Local renewable energy is beneficial for the homeowners and the local economy because people save money on electricity bills and more money stays within the community. CCA is one of the most promising strategies for dramatically reducing greenhouse gas emissions. It would also help the city reach its renewable energy goals set out in the City of Santa Cruz 2020 Climate Action Plan (CAP) released in October 2012 (Hoppin, 2012). With a CCA, local residents and businesses would be able to receive energy that comes from a higher percentage of renewable energy without investing in their own solar panels (City of Santa Cruz, 2012). The Santa Cruz County government and other regional officials are currently investigating the feasibility of CCA within the Monterey Bay region (Pierce, 2012).

California is an ideal place for solar energy due to its location and ample amount of sunshine. On January 1, 2007 the California Public Utilities Commission (CPUC) showed their commitment to California's clean energy future with the introduction of the California Solar Initiative (CSI). The CSI provides "rebates for solar electric systems smaller than one megawatt on all existing homes, plus all new and existing commercial buildings" (Davis, Madsen & Kinman, 2012). The City of Santa Cruz is number one in California among mid-sized cities for most solar installments per resident and is eighth in the state for number of solar installations; 1.44 out of 100 residents have installed solar panels. Fog is a major complaint of local residents and a factor limiting solar energy generation. Santa Cruz is eleventh for mid-sized cities in terms of capacity (watts) per

resident with 0.076 KW capacities per capita (Davis, Madsen & Kinman, 2012). This high installation rate and low capacity rate shows that Santa Cruz is committed to clean energy. Michelle Kinman, one of the authors of the Environment California report on solar energy in California, stated, “Santa Cruz has really set the bar for other large cities to follow in the future” because if other cities like Los Angeles were to achieve the same level of solar panels distribution as Santa Cruz, there would be 50,000 solar roofs and 400 MW of solar power (Davis, Madsen & Kinman, 2012; Hoppin, 2012). This would put Los Angeles at the same solar market level as Australia (Davis, Madsen & Kinman, 2012). In 2010 research showed that California was sixth in the world behind Germany, Spain, Japan, Italy, and the Czech Republic in terms of cumulative installed solar photovoltaic capacity. However, clean energy may come at a price; increased interest in solar energy in California has put public farmlands in danger. California needs to find a way to regulate the amount of farmland being converted into large-scale solar development. Four hundred crops and a \$30 billion industry is being threatened by 100 proposed solar generation plants that would cover roughly 40,000 acres, the size of 470 Disneyland theme parks. Clean energy is also encroaching on habitats that are home to threatened and endangered species (Cone, 2013). If California wants to create a sustainable state, the state government and local policy makers need to regulate solar energy development with holistic and long-term goals. There should be more of an emphasis on decreasing energy consumption because clean energy should not jeopardize the environment and food security.

Water

Water is an important topic in Santa Cruz because drinking water comes from local watersheds. Santa Cruz, like the rest of California, has experienced draughts over the last few years. Santa Cruz is also home to some of the best waves for surfing in the world, so protecting the ocean is high on locals' list of priorities. TSC was part of a large effort in Santa Cruz to stop the construction of a proposed desalination plant and help find alternative solutions to water shortages. Rick Longinotti was a cofounder of Santa Cruz Desalination Alternatives and worked with other groups such as the Surfrider Foundation, Ecological Landscaping Association, and Women's International League for Peace and Freedom to help get Measure P on the Fall 2012 Ballot for Santa Cruz County. Measure P was not a vote on whether to build the plant or not, it was a vote to make sure Santa Cruz residents have a say in whether the desalination plant is built once assessments of the project are finished. Measure P passed and now guarantees citizens the right to vote on desalination in the future. The proposed desalination plant would put Santa Cruz in debt and all the money that the plant would spend on energy would go to PG&E. The plant would also use 12-13 times more energy than the current water system and there are greener alternatives such as water transfers between districts, purifying wastewater to recharge aquifers, establishing a water neutral grow policy, and creating water conservation for large golf courses. The desalination plant would also threaten marine life and ocean quality by taking seven million gallons of sea water per day, cleaning it of plankton, krill, and fish larvae and throwing the discards back into the ocean. This would not be beneficial to the ocean or the local surfers. The push from Rick Longinotti, TSC, and other local, national, and international groups to get Measure

P on the ballot this last fall was an important achievement. One of the major foci of Transition Towns is citizen participation in community decision-making, especially ones that involve increased energy use and damage to the environment.

In November of 2010 TSC and the Resource Conservation District (RCD) of Santa Cruz sponsored free workshops on home catchment systems that included presentations about the economic and environmental benefits of water catchment and hands-on training for installing catchment tanks³². The RCD hopes that water catchment systems will help reduce erosion by reducing the amount of water runoff into storm drains and creeks during storms. Water also picks up waste, detergents, and pesticides as it flows over hard surfaces and the pollution ends up in the ocean. Water catchment systems help the environment in addition to making owners more self-sufficient and less reliant on centralized water. Water catchment systems save money by utilizing rain water, but they can also serve as an educational tool and reduce water usage by making owners of water catchment tanks more aware about where water comes from and how much water they use. If water is collected and stored in tanks, then it can be let out into the soil to water landscapes at a desired rate (Hersch, 2010).

I have explained the Transition movement, the original TTT, and some of the ways TSC has increased awareness and taken action in Santa Cruz, so I can assess the Transition movement, its benefits, what it can improve upon, and how Santa Cruz, a mid-sized California city, can use Transition to strengthen its community. The next section includes my own views on Transition, TTT, and TSC.

³² Water catchment and gray water systems are legal in California for single-family homes (Hersch, 2010).

6. Comments and Critiques of Transition Towns

Transition is a continually evolving process. It is crucial that those involved learn from the process as it unfolds. Our present ecological crisis is a cultural crisis. We are currently in a transitional time between two opposing systems and views. The current system is in the conservation phase, resisting change and fighting to hold onto an unsustainable way of life. The new alternative system represented by Transition Towns is in the reorganization phase, embracing change and learning from the current unsustainable system. Transition has not reached everyone in the world because Transition cannot be forced; transition is a process that involves self-discovery. People are holding onto the current system because they enjoy the goods and services that the globalized market can provide and their criteria for quality of life are different than those involved in transition. Even when we are presented with facts that our belief system is wrong, humans do not change when someone tells us to change because “one’s experience of the world sustains one’s belief system – but one’s belief system also sustains one’s view of the world. Force is not a sure way to change either” (Shepherd, 2010: 326). Transition has not become mainstream because people still believe in the current system. However, Transition is spreading throughout the world because people are experiencing the effects of a failed belief system and transition is shedding light on a new paradigm that resonates with the way people feel the world should and could function. If a transition group is able to greatly influence the community, the community may take on the culture of transition based on intrinsic values. The transition culture is one of the positive features that has come from the Transition movement. A transition culture strives to support self-development, harness a sense of belonging in a community,

create a sense of place and local identity, and connect to the bioregion (Hopkins, 2011). People experience turmoil because their values and lifestyle do not align. The transition process attempts to increase individuals' personal capacity to change in order to help individuals align their values with their desired sustainable lifestyle. Transition has been helpful for many individuals and communities because it offers an alternative to the current system that seeks to increase the well-being of people and the environment, rather than the well-being of the economic market.

Other positive aspects of Transition include behavior change and work on personal resilience. They have done remarkable work on fostering inner resilience and connecting the idea of inner transition to the changing social structures. This can be seen through the transition streets project, which works on both behavior change and improving existing infrastructure through social innovation. It is important to note that innovation is not limited to technology. Innovation, "the successful exploitation of new ideas," also applies to social behavioral change (Seyfang, 2010: 7625). Transition attempts to develop a space on the local scale that encourages creativity and experimentation to create new ideas. Transition is part of the untapped potential of grassroots innovation that occurs on the local scale within communities. Transition Streets is a socio-technological behavioral innovation that promotes simple structural improvements to already existing homes to increase energy efficiency and decrease carbon emissions. This type of social innovation is what can benefit the wider society.

Transition has adopted the idea of resilience as a way of thinking about communities. *The Transition Handbook* and *The Transition Companion* offer overview of their idea of resilience and how the idea of ecosystems can be used to strengthen a

community. They make it generally simple, so everyone can understand the concept of resiliency. However, I think including information on the adaptive cycle and thresholds in these Transition resources would be helpful. The adaptive cycle and thresholds helped me understand and assess where Santa Cruz, Totnes, the United States, and the world are in the cycle, which gave me a better understanding of scales of change and the need for diversity. After further research into resilience theory beyond the explanation given by Transition Towns, I was also able to better understand the role of Transition Towns in relationship to the entire environmental movement. I think the Transition movement has been successful at replicating in different areas around the world because that is the scale at which it is most effective. Change on a smaller scale is easier and takes less time. Transition was designed for communities and that is exactly who it is influencing.

Transition has created a comprehensive model that includes inner resilience to help individuals look after their own well-being, so they do not become overwhelmed during the transition process, but there are some ways I think Transition can improve its explanation of behavior change. The Stages of Change model is helpful, but I think it would be beneficial for Transition to include resilience theory of individuals in their explanations of behavior change. Transition focuses on inner resilience to help individuals become more aware of their limits and ways to improve their well-being, but Transition does not explain inner resilience in reference to resilience theory beyond the idea of feedback loops. Similar to my earlier critique, I think Transition would benefit from including the adaptive cycle in their explanation of inner resilience because, although individuals are one of the smallest scales of change, we are extremely complex creatures and do not follow a linear pattern of change. Humans are a microcosm of the

world and follow a similar pattern of exploitation, conservation, and release if they are not able to balance their own reserves of energy. With behavior change it is important to remember that change is not linear and people will often relapse into old habits. Helping individuals understand that relapse is part of the behavior change process can motivate individuals to continue making positive changes and protect against individuals losing hope and falling forever into unhealthy habits. Exploiting our own bodies and not giving them the nutrients, rest, and care they need is the same as exploiting the earth.

Transition suggests Mindfulness Based Stress Reduction as a technique to reduce stress, manage chronic pain, and increase health and personal resilience, but I believe mindfulness would also be a helpful practice for developing awareness skill in individuals (Hopkin, 2011). One of the first steps of Transition is creating awareness of issues, but awareness goes beyond just knowing about environmental issues; it is about recognizing patterns that are harmful or helpful. Awareness can be fostered through mindfulness³³. Mindfulness is intentional non-judgmental awareness that focuses on both internal processes and the external environment. Mindfulness is a way of engaging with the world through the complete mental, emotional, and physical experience of the present. It has been shown to help in behavior change because it cultivates the possibility of freeing ourselves of reactive habitual patterns of thinking, feeling, and acting. This is possible because mindfulness is not about blocking out conscious thinking, but is about

³³ In an interview, Jon Kabat-Zinn explains how mindfulness influences ethics, morality, and societal transformation: “Mindfulness is about love and loving life. When you cultivate this love, it gives you clarity and compassion for life, and your actions happen in accordance with that. All ethics and morality, and a sense of interconnectedness, come out of the act of paying attention [...] With the long view, we can trust that the seeds that we’re planting are transforming the world [...] and societal transformation isn’t going to happen in one month, one year, or even one lifetime. But we see it happen person by person in front of us, and we don’t have to worry about the future if we’re taking care of the present. In some sense that’s the best insurance policy we can have”(Kabat-Zinn, 2012).

becoming aware of emotional states and physical signals that result during certain activities. Once people have identified their habitual reactions they can then work towards changing their reaction into a healthier behavior (Kristeller, 2007). Practicing mindfulness helps people respond reflectively instead of reactively (Burke, 2010).

The open-ended guidelines of Transition allow for room to create, but also allow towns to flounder. There are many ‘if communities do this, then this will happen’ scenarios in the Transition manuals. This means that communities must be willing to put themselves out on a limb to try new things. There are also no guarantees of transitioning. Towns throughout the world have been successful at building community, decreasing energy usage, localizing their economy, increasing self-sufficiency, and increasing the resilience of their community, but this does not guarantee that every community is ready to transition and change. This is why understanding the process of change in individuals and communities is important. It may be frustrating when change is not happening at our desired rate, but we must understand that change takes time, especially on larger scales, and change cannot be forced upon people.

Transition also needs to find a way to get feedback and assess how the transition process is going. Transition is a create-by-doing and a learn-by-doing process that needs to be able to evaluate what is and isn’t working. Feedback from Transition members and nonmembers in the community could help Transition initiatives understand what changes Transition needs to make to engage more of the community or whether the community wants to transition.

7. Is Change Possible? Community Capacity to Transition to a Resilient Community

Grass-roots initiatives face many obstacles to creating change in their community due to lack of secure funding, limited power and resources, and burn out from volunteering time to the initiative while working to make a living. However, community-led pro-environmental initiatives have become important in the push to lower carbon emissions in higher-income countries. According to Shrader-Frechette's interpretation of responsibility in environmental justice literature, "to the degree that people have the ability to make a positive difference in such situations, therefore they are obliged to do so". According to this interpretation, communities in higher-income countries have the responsibility to radically lower their carbon emissions below the norm because they have the ability to do so. However, individuals may believe that they do not have the capacity to make these changes. The community capacity theoretical framework analyzes the personal, organizational, cultural, and infrastructural capacities of a community in order to "explain some of the common problems that arise in attempting to create change from a relatively weak position, and to find solutions by thinking creatively about the interaction of capacity and responsibility" (Middlemiss & Parrish, 2010: 7566). This framework is based on the premise that the nature of agency in individuals and communities depends on their social context and social structures also create the means for which agents can take action (Middlemiss & Parrish, 2010).

I have discussed the positive and negative aspects of Santa Cruz and explained how TSC is trying to engage Santa Cruz in climate change, water conservation, energy conservation, and economic issues in an effort to change the social structures of Santa Cruz and create a more sustainable and resilient community. Now, within Middlemiss

and Parrish's (2010) theoretical framework, I will discuss the personal, organizational, cultural, and infrastructural capacities of Santa Cruz to identify the already existent strengths and barriers to change. This will create a better understanding of how TSC can make an impact on the ability of the Santa Cruz community and its member to take responsibility for their ecological footprint and help transition to a more equitable low-carbon society.

Personal Capacity

Personal capacity refers to the resources (understanding of sustainability issues, core values, willingness to act, skills to act, and enthusiasm for change) an individual has to participate in their community (Middlemiss & Parrish, 2010). Individuals who decide they want to take action in their community already have a strong personal capacity because they feel that they are ready to take responsibility for their own ecological footprint. Transition works hard to increase the personal capacity of individuals by increasing awareness about environmental, social, and economic issues, creating spaces in which individuals can share their skills, supporting individuals with knowledge about the difficulties of behavior change, inviting people to become involved with projects that create practical and observable changes, making projects fun and fulfilling, and having an open environment where everyone is welcome and encouraged to join. Transition acknowledges the importance of an inner transition and creating a positive self-image that is capable of change and resilient during difficult times. Focusing on inner resilience in individuals has helped people involved with transition navigate the uncertainty of transition.

TSC works hard increase awareness of global and local issues to the Santa Cruz community. Their open to the community potlucks, speakers, workshops, and documentaries on various subjects help engage the community in discussion about these issues. Awareness of issues is key to preparing to take action, but I think Transition could increase their influence in the community by creating more immediate benefit projects that engage more members of the community. Offering more opportunities for members of the community to become involved in projects that save money with energy efficiency or waste reduction, increase pleasure with fun activities, or increase self-determination and achievement could help TSC expand into more of the community. Concern for the issues is important for taking action and creating changes, but TSC also just needs more people to get involved. I think the Transition Streets project would be extremely helpful in Santa Cruz to increase awareness of energy, waste, water, and transportation, and also increase the ties within neighborhoods. Transition Streets has had success with both behavior change and reduction of carbon emissions because neighbors hold each other accountable. Changing and sustaining behaviors is easier when you have support.

Organizational Capacity

Organizational capacity refers to the values held by organizations in the community, the extent to which those values promote sustainability, and the support the organizations can give for stimulating change to become more resilient (Middlemiss & Parrish, 2010). In Santa Cruz, organizational capacity is increased by groups like EcoFarm that work to bring farmers together to share ideas, skills, and create strong communities to support each other. One of the explicitly stated goals of the EcoFarm

conference is to increase the skill sets of individuals that want to get into farming and other sustainable food practices, so the system can change towards a more humane and sustainable food system. EcoFarm started in 1981 as a risky marginal idea, but has established itself in California as a leader of the booming organic food system. It also helped create a place for organic farmers to become a community and support each other. This is one of the ways in which increased organizational capacity can increase the infrastructural capacity of a community. The sheer number of local initiatives in Santa Cruz suggests that its organizational capacity is strong and has been a large part of Santa Cruz being a leader in renewable energy and sustainable agriculture.

Cultural Capacity

Cultural capacity refers to whether or not a community's values and history align with sustainability as an objective (Middlemiss & Parrish, 2010). Many people in Santa Cruz are deeply connected to nature because the city and county are home to some of the most spectacular landscapes in the world. World class waves and beaches, superb hiking and biking trails, mountains that look over the vast ocean, unsurpassable sunrises and sunsets, and redwood trees that induce nostalgia for past lives, Santa Cruz is a place of beauty and induces a passion for life. This has created a culture that values its ecosystems and the pleasures that they produces. This may also be why Santa Cruz has taken a stance against Styrofoam and plastic bags. Styrofoam was banned in 2009 from being used at any restaurant or grocery store and plastic bags were more recently banned from grocery stores in July 2012 (Brown, J.M., 2013). Keeping the beaches and forests clean is a priority to maintain the beauty of Santa Cruz. Santa Cruz's culture is closely connected to nature and Santa Cruzian's take pride in being weird.

Food is obviously very important to Santa Cruz and it has helped move organic farming and sustainable agriculture beyond the farm and into the university. Food is a part of Santa Cruz's history and culture and a fresh batch of farmers makes it look like Santa Cruz will continue to be connected to sustainable farming for the foreseeable future. I regularly attend the downtown Santa Cruz Farmers' Market on Wednesday afternoons. It is three blocks from my former high school and a block and a half from my father's restaurant. There is a diverse age range at the Farmers' Market and it is a major social scene to run into old friends and other people in the community. A good majority of the sellers are young and everyone is friendly. The Farmers' Market is a fun place to walk around, try samples, catch-up with friends, meet new friends, listen to music, and buy visually appealing and delicious food. Nothing beats fresh berries or a dinner made from farmers' market vegetables.

Social capital is the glue that keeps communities together. Communities engage in their space by manifesting physical designs that align with their environmental, ethical, and spiritual values (Adler & Newman, 2002). Since 2010, there has been a movement throughout the United States called the Open Streets Project that temporarily closes streets to create a large public space that is safe for people to walk, bicycle, dance, play, and interact. Santa Cruz Open Streets (SCOS) was created in 2012 and held an event on West Cliff Drive, a long strip of road that caresses the majestic coast and world-class surf spots. SCOS is not associated with TSC, but aims to strengthen the community and offer an alternative way of imagining Santa Cruz, car and carefree. When there are cars on the road bikes and pedestrians are overcrowded on the sidewalk. It is a street that some people in Santa Cruz visit every day to go to the beach, walk along the ocean, sit and

read, surf, and walk their dogs. On October 7, 2012, West Cliff Drive was closed from one of the best surf spots in the world, Steamer's Lane, to Natural Bridges State Park. This 2 mile long strip of road became open to 10,000 people who filled the space with dancing, biking, roller-skating, hula hooping, free bike repairs, and booths about local businesses and organizations that are working to help create healthy and sustainable lives. SCOS promotes connectedness and pride in the community, an active and sustainable lifestyle, the local economy, and the use of public spaces for other community building activities (SCOS, 2012).

The Santa Cruz community has had a devastating start to the year. Two Santa Cruz police officers, Sgt. Loran "Butch" Baker and detective Elizabeth Butler, were gunned down by a sexual-assault suspect. There has been an outpouring of support for the officers and their families. Everyone was affected in some way by the shootings and the community has responded as positively as possible. The California Highway Police (CHP) created a video of pictures of Baker and Butler, the cross county memorial procession, and the mourners that turned out to show their support. The video is filled with these words of support and hope:

"When a peace officer is killed in the line of duty, it is an attack on the moral fiber of our society. But these attacks will never define us. For what defines us is what unites us. Detective Butler and Sergeant Baker were protectors and colleagues, neighbors, friends, a mother and father and beloved members of our community. On behalf of the law enforcement community, thank you for your support." (Turner, 2013)³⁴

This tragedy is a reminder of how precious life is and how communities cannot ignore the reality of darkness. Santa Cruz also experienced a deadly shooting downtown,

³⁴ This video was created for the Santa Cruz Police Department (SCPD) and the families of the victims. It is now available online for the public (Turner, 2013).

an armed robbery at the Food Bin, and a robbery and shooting of a college student. Gangs are a problem in Santa Cruz, but many people try to ignore the issue because many people in the area are not directly affected. These incidences have been a wake-up call to what actually exists in Santa Cruz. Santa Cruz, like the rest of society, must address the issues of homelessness, drug addiction, mental illness, gangs, violence, and inequality because it is part of the community. These are issues that need to be addressed in order to strengthen the community because if the needs of all cannot be met, the community is not doing its job. In a recent article Levy expressed the need for smart compassion and the strengthening of services for disadvantaged groups³⁵. He expressed that this is a time to reach out and find new ways to address these issues rather than create more distance between the community and those who need help (Levy, 2013). After the violence in Santa Cruz these last few months, the Impact Media Group of Santa Cruz is working on a movie that captures the peaceful, quirky, and playful side of Santa Cruz to help the community heal. Four hundred people showed up to express themselves and what Santa Cruz means to them. Starting May 3 the film will be projected in downtown Santa Cruz for everyone to see and appreciate the positive and diverse personalities of the Santa Cruz community (McCord, 2013). If there is one thing Santa Cruz has, it is local pride.

Infrastructural Capacity

Infrastructural capacity refers to whether the social infrastructures set in place by government, business, and community groups can create sustainable living for the community (Middlemiss & Parrish, 2010). The ubiquitous nature of the Internet has help spread the Transition Network throughout the world through blogs, TedTalks, and

³⁵ This article provided information on the Community Safety and Compassion Forum at Santa Cruz High School (Levy, 2013).

YouTube videos. The Internet has also made sharing of information on gardening and farming more accessible. Access to information has helped communities learn about transition and spread the idea of resilient communities and low-carbon communities.

Santa Cruz's position as a solar energy leader in California reflects both its cultural and infrastructural capacity. Santa Cruz is also a good example of how destabilizing forces help create more diverse and flexible societies (Thompson & Turk, 2009). Santa Cruz was part of the group in the seventies that adopted solar energy and continued with it through the eighties and nineties when most energy companies no longer worried about developing solar energy. Solar development is part of Santa Cruz's history. The first solar system in California was connected to the Bonny Doon electrical grid and net metering, a program to encourage solar installation that originated in Santa Cruz (Hoppin, 2012)³⁶. Resilience theory and community capacity highlight two important features of solar development in Santa Cruz. The energy crisis of the 1970's resulted in high oil prices and an environmental movement. This crisis was a shock to the socio-economic system and forced many people to become aware of their energy consumption, realize that the earth has limited resources, and experiment with technological development of alternative energy sources. The oil crisis alerted people that dependency on oil was dangerous to the economy because all the companies and capital were invested in oil. This disturbance freed up resources to be invested in development of new technologies, a sort of emergence of new technologies through emergency. Though there was an increased drive to diversify energy resources so that the economy would be able to handle the energy shortages, the shock did not last long

³⁶ Bonny Doon is located in the mountains above the City of Santa Cruz and past UCSC in the Northwest of Santa Cruz County.

enough and reorganization of the energy system did not occur. This could have been an opportunity to diversify the United States' energy sources, but once oil prices decreased, so did the focus on investment in alternative energy (Seyfang, 2010). Instead of continuing to invest in alternative energies, the focus went back to oil.

However, Santa Cruz continued to develop and invest in solar energy even when oil prices decreased. Having a core group in Santa Cruz that continued developing solar increased the city's infrastructural capacity because there was already a standard for renewable energy. This is why it is no surprise that Santa Cruz leads California in solar installments per resident. Santa Cruz learned from the oil crisis, stuck with diversification of energy sources by continuing to invest in solar technology and now leads California in solar energy. And Santa Cruz will continue to play a role in solar energy technology because Nobuhiko Kobayashi, an electrical engineering professor at UCSC, in partnership with Antropy, a UCSC graduate founded Silicon Valley firm, have received a \$1.6 million grant to continue the development of a device that captures solar energy more efficiently (Gabrielsen, 2012).

University of California, Santa Cruz with its Center for Agro has been a large contributor of sustainable farming practices and provides the area with education and food. Santa Cruz has a strong agricultural infrastructure. Santa Cruz, Salinas, Watsonville, and Monterey provide a large amount of food locally in the Santa Cruz area and across the United States. TSC doesn't need to be too involved in localizing food production because Santa Cruz already has such a strong food system. TSC can help in education, though, and inform individuals in the community about how to grow their own food, join CSAs, reduce food waste, and support local businesses.

In general in the United States Farmers' Markets and local food systems have expanded and become more of a prominent feature in towns. Local food has become an innovative market with a 67 percent increase in farmers' markets since 2008. Interest in local food has increased since the beginning of the recession and participation in the EcoFarm conference has increased as well. The EFA and the EcoFarm conference are important because they provide economic opportunities in sustainable jobs. EcoFarm conferences provide people with information and skills about how to grow organic food and also provide other seminars on skills like butchery (Limbach, 2013). This is all part of the process of changing the system and expanding organic farming and humane meat production.

Improving Community Capacity to Take Responsibility for Ecological Footprint

Is transition only possible in certain types of communities? Are grass-roots initiatives a niche that can only be supported by communities that already have the capacity (empowerment and resources) to support pro-environmental social change? After investigating TTT and TSC, my answer would be yes. The similar liberal and alternative background of the two areas suggests that there are certain types of communities that will engage in environmental initiatives, but other papers have concluded that it is not appropriate to ask the question 'where can community-led pro-environmental action work or not work?' It is more beneficial to use an analytical framework that allows communities and scholars to better understand already existent capacities of a community and their barriers to pro-environmental social change. This way, communities can use their strengths to increase empowerment and find ways to improve their areas of weakness (Middlemiss & Parrish, 2010). Santa Cruz and Totnes,

although similar in their liberal backgrounds, are very different places and have experienced different levels and rates of change. The Santa Cruz community is closely connected to its environment and takes pride in protecting its oceans, forests, and watersheds. Santa Cruz has been in a gradual transition to a resilient community for much of its existence and continues to be a leader in agroecology, renewable energy, localization, and education on these subjects. Totnes, a town with a population one-eighth the size of Santa Cruz, has made radical changes to their community in a matter of years. At this moment I would not be able to judge whether one is more resilient than the other. The two communities operate in very different locations, are on different scales, have very different lifestyles, and the role of Transition as a model in each of these communities has been very different.

It makes sense that the Transition model was a very effective way of making changes to the Totnes community because that is where the model was created. The Transition Town idea would not have grown throughout the world on such a large scale if it hadn't had such an outstandingly positive impact on the Totnes community. However, I don't think that Santa Cruz has jumped onto the Transition idea as quickly as Totnes and other communities around the world because the Transition model is designed to help communities that feel like they have no other way of transitioning into a more resilient community. I would say that Santa Cruz was already in transition before TTT was established in 2006. There are too many local initiatives, community groups, and institutions in Santa Cruz to mention in this thesis, but I have discussed some clear indicators of transition in Santa Cruz. Santa Cruz has been and is a leader in solar energy; it has a well-established local food system of farmers markets and local grocery

stores that focus on sustainable farming practices and social justice; it has local banks and credit unions; it is committed to protecting its forests, watersheds, and oceans; and with the establishment of Think Local First in 2007, Santa Cruz started focusing on localizing its economy. True to the nature of transition, Santa Cruz has been transitioning in its own way. Community-led initiatives are promoting sustainability and creating changes using resources specific to Santa Cruz. Santa Cruz's rich cultural connection to its natural surroundings has made transition an unconscious part of Santa Cruz's development.

When I first started this thesis I was distraught that TSC had been in Santa Cruz since 2008, but wasn't that well known because I thought the Transition ideas and approaches to creating change in a community seemed so effective. The comprehensive nature of the Transition model made me immediately attracted to the idea of transition and resilient communities. I couldn't understand for the longest time why Santa Cruz wouldn't be completely behind this idea of transitioning. I wondered why after almost five years, there hadn't been any radical changes from TSC that had transformed the city of Santa Cruz. I have come to the conclusion that Santa Cruz hasn't whole heartedly adopted the Transition model because the city had already created its own ship to sail through the choppy waters. Santa Cruz initiatives may have a pet-cause syndrome, but it is because the community truly cares about their community and has invested its own time and energy into making the changes that need to happen. It is not a fault of Santa Cruz groups that they haven't dropped their own projects and completely embraced Transition. They are helping create a better future for their community in their own way. I think the concept of transition is more beneficial than following any specific model that

the Transition Network has created. The important thing is that Santa Cruz is taking steps now to improve the community and prepare itself for a low-carbon future.

The community capacity framework highlights the many strengths of the Santa Cruz community. So what can TSC do to help in the transition? Transition Santa Cruz is not as well known throughout Santa Cruz as its members would like it to be. They have, however, been effective in creating a language with which to talk about a future thriving community. Transition may oversimplify resilience theory, but it is still a helpful way for people to think about their communities. The way Transition presents resilience does not hinder individuals or communities in any way. Resilient is more than sustainable; a resilient system is able to withstand shock and still have the capacity to transform and improve. It is regenerative. Resilient is not a word that we often use to describe a community, but if explained as a term that expresses how a community should reflect an ecosystem in order to thrive, then the word makes more sense. The word resilient has two uses: creating a resilient community means preparing for the future and it means creating a lifestyle that increases the well-being of the community and its members today. Making a community more resilient for the future creates a better life today.

Does TSC have the capacity to instigate change in Santa Cruz? I think TSC would be an effective part of moving Santa Cruz in the direction of becoming a resilient community if it were able to tap into the collective genius of the Santa Cruz community. TSC can help network and connect Santa Cruz. It has been difficult for TSC to establish a presence in Santa Cruz because the city and county already have local initiatives that are leaders in their specific fields. However, TSC can plant the idea of permaculture in Santa Cruz and cultivate the most beneficial relationships between all the organizations in

Santa Cruz. TSC has also helped focus Santa Cruz in a positive direction and can continue being a positive influence by focusing on what can be done to bring Santa Cruz together. There has not been a large gathering with representatives from all of the schools, local initiatives, businesses, and community members to figure out what can be done to make the community more resilient. TSC could help the community by gathering the entire community and creating a positive vision of a sustainable future.

TSC has tabled the idea of creating the event Regenerative Santa Cruz. They want to go beyond sustainable; they want to create a healing and nurturing permaculture plan for the entire city. This would be an open to community multiple day event at the Santa Cruz Civic Auditorium in downtown Santa Cruz. Everyone in Santa Cruz would be invited and encouraged to become involved in the strengthening of their resilient community. The ethics of permaculture would be applied to make sure that the plans for Santa Cruz would care for the earth, people, and their share, weave together the community, and work toward a common goal of a resilient and regenerative community.

It would also be helpful for Santa Cruzians to learn about resilience theory and understand the community's capacity for change. Bringing the community together in an event would be one way to assess the collective capacity of Santa Cruz and address the areas that need strengthening. However, the community must address the city's painful realities of gangs, homelessness, violence, drug abuse, and inequality, if Santa Cruz wants to truly make a resilient community. This would be the beginning of the largest collaborative effort in Santa Cruz. The community capacity of Santa Cruz to take responsibility for its ecological footprint and create a regenerative community is strong. Santa Cruz has already established itself as a leader in solar energy and sustainable

farming, and it has the capacity to continue its positive transition to a resilient community in this continuously changing world.

8. Conclusion: Learning to Embrace Change and Becoming Part of the Transition

A new paradigm does not *create* a new experience; experience outgrows the inherited patterns of understanding, generating a tension that builds up until eventually another paradigm comes along that expresses what is being experienced. The emergent paradigm acts as a midwife, pulling the experience from the darkness into the light. And there is no question that the new paradigm affects our experience – it helps it develop and “fixes” it, in the same way that the developing process helps to reveal and fix an image on photographic paper. The potency of any new paradigm is determined by how faithfully it reveals what is *already* being experienced. (Shepherd, 2010: 327)

Transitioning is about being open to change. Experiences we’ve had in the past shape how we go through life and how we react to different situations. The hesitations we have in certain environments shield us from experiencing much of life. What cause these hesitations? Any experience where we have been told no, laughed at, ridiculed, yelled at, or embarrassed for something we did that was not accepted. This is what holds us back from trying new things, from being creative, from going beyond who we think we are, to becoming who we can be. From our experiences we have created habits and an identity. Many of us have put ourselves in a box circumscribed by our past, so we act accordingly. Our habits and addictions are difficult to break because we think they define us. But we don’t have to define our entire society by what we think we are. We have the ability to change, but we have just convinced ourselves otherwise.

We are taught to be individuals and encouraged to create our own success, but there is no way to be independent of everything and successful in the world because everything we are and all of our experiences can only be described in relationship to something or someone else. “Transition is about reconnecting people; breaking-down the individualization that has been created” (David, personal communication, January 4, 2013). Transition highlights that our individual struggles are not unique struggles. We

are all interconnected, so caring for others means caring for ourselves. We must recognize our relationship to future generations and be able to provide a safe and fulfilling life for them. Santa Cruz wants to protect the natural beauty of the environment with a local economy that promotes fulfilling and sustainable livelihoods while strengthening social relationships, so children and future generations will be able to live in this beautiful area and experience an even better life than we do now.

When we were children we learned by doing. We were forced to experience everything to learn about the world. Transition is a unique educational process because it embraces child-like curiosity in the form of a revolutionary social experiment. Transition is about the development of people individually and collectively. It pushes the boundaries of common sense and what we hold to be true in our society. It redefines our role in our own lives by fostering individuals to be active participants in shaping a community. It has become a place where individuals and communities can determine their own quality of life and do not have to succumb to the life-stunting society that the world has become.

Threats of climate change are real and need to be addressed. In 2008 President Obama promised us change, but now it is clear that we cannot wait for change; we must embody the change we want to see in our communities and in the world. The capitalistic view of freedom to self-indulge has created a world where we live beyond our means. Climate change and disease warn us that the way we are living is unsustainable. We must take responsibility for our detrimental actions and change our socio-ecological systems, so jobs and the environment are not in opposition. We cannot let fear trap us within our detrimental cycles of exploitation and destruction. We can learn from the past

and recognize that we need to have a long-term view and diversify our economy to create a more resilient socio-ecological system and society. We have the opportunity to embrace change and create an alternative system that values the well-being of humans and their environment. In order to achieve an alternative system we must be mindful of our relationship to our environment and become aware of our harmful habits, so we have the freedom to change ourselves. Increased personal resilience gives us the chance to change our relationships to others, society, and the environment. Transition Towns, community-led and value-driven pro-environmental initiatives, are one of the ways communities and individuals are taking responsibility for their ecological footprint by changing their lifestyles and transitioning to low-carbon communities.

The Transition movement has been successful in communities all throughout the world because it frames our current crises in a positive light as opportunities for a positive transition to a low-carbon community that can provide increased well-being for the entire community and its members. The collective-action approach to the Transition model creates a support system within a community that helps individuals create and sustain behavior changes to increase their personal capacity for a sustainable lifestyle. The transition Network's ecosystemic goal of creating a resilient community addresses our personal, economic, and environmental issues from a position of hope. The success of TTT and the idea of creating a resilient community with increased well-being has helped spread the idea of transition. The Transition model has become a powerful vehicle for discussing environmental action as more than sustainability. The model has helped communities understand that to mitigate climate change we must address all our

societal issues because inequality, the economic crisis, and climate change are all interconnected.

Although the City of Santa Cruz has not adopted the Transition model per se, its close connection to its natural environment has led the city to create a culture that is deeply invested in sustainability. Santa Cruz is transitioning, but has been doing so in its own way since before the Transition movement started. TSC has not had a huge impact on changing the social structure of Santa Cruz, but it has brought the idea and language of transition to Santa Cruz and has introduced the concept of a resilient community. Santa Cruz has a rich community of farmers, scholars, surfers, artists, musicians, dancers, families, outdoor enthusiasts, and local business owners. The fun-loving and open-minded community has the capacity to change. I believe TSC will have a positive impact on the Santa Cruz community because they promote awareness of a broader vision that shows the interconnectedness of the community's issues. Looking into the future, I think TSC can have an important role in promoting the idea of permaculture in Santa Cruz and transforming it into a low-carbon resilient community that promotes the well-being its members and the environment.

Transition is a story that is changing the world. It is an inner and outer process that can be used to turn problems into solutions. Transition Towns have helped propel a cultural shift in communities by leading by practical example. Transition is an ongoing and continuously evolving movement that has helped create a shift in people's perception from fighting against a failing system to moving forward toward a more desirable low-carbon future. Change is inevitable and Transition Towns are embracing this as an opportunity for positive transitions in a changing world.

When I was young and free and my imagination had no limits, I dreamed of changing the world. As I grew older and wiser I discovered the world would not change – So I shortened my sights somewhat and decided to change only my country, but it too seemed immovable. As I grew into my twilight years, in one last desperate attempt, I settled for changing only my family, those closest to me, but alas, they would have none of it. And now I realize as I lie on my deathbed, if I had only changed myself first, then by example I might have changed my family. From their inspiration and encouragement I would then have been able to better my country. And who knows, I might have even changed the world. (Tombstone in Westminster Abbey)

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