A RESOURCE-BASED SYSTEMS APPROACH TO GLOBALIZATION, ORGANIZATION AND PEOPLE: A CASE STUDY IN THE OUTSOURCING SECTOR OF THE US-BASED GLOBAL PHARMACEUTICAL INDUSTRY

BY

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DISSERTATION

Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Communications in the Graduate College of the University of Illinois at Urbana-Champaign, 2012

Urbana, Illinois

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ABSTRACT

As an interdisciplinary attempt to explore and demonstrate the complementarity of natural and social sciences and to achieve synergy effects in the contemporary global scholarship of humanistic social and behavioral sciences, this dissertation proposes a resource-based systems approach to the study of globalization. According to this approach, globalization is viewed as the emergent pattern of the resource organizing dynamics of the global ecosystem including human activity systems and their wider context of life support systems. For systems at the global level, global integration and its seemingly homogenizing effect are the strategic structural responses to the constraints and uncertainties caused by world resource attenuation and inequality as well as their interactions with human perceptions and behaviors where rationality is bounded by cognitive and affective limitations. This theory is built upon the principle of self-organization—a natural system’s evolutionary capabilities to self-organize in terms of reducing its internal entropy or increasing the efficiency of its organizing dynamics. Therefore, the resource-based systems approach to globalization is in essence an approach to theorizing the nature of organization in any human activity systems. Concepts and definitions such as resource, knowledge, uniqueness, innovation, learning, culture, social network, personality, identity, life and the spirit of entrepreneurship are discussed under this theory and are substantiated by an ethnographic study of the outsourcing sector of the US-based global pharmaceutical industry, where firm is particularly emphasized as the point of entry. Systems analysis was applied to the transformations under the impact of contemporary globalization and the interacting dynamics at the various constituent levels and dimensions of the global pharmaceutical industry and its environment. Though demonstrating uniqueness and idiosyncrasies, they all exhibit the nature of
organization, which refers to a system navigating through complexities and uncertainties and innovatively exploring strategic structural responses to transform constrained relations with the environment to achieve efficiency in its resource organizing dynamics or coherence in the meaning of its living that is essential to its sustainable mode of being. Implications for policy-making are discussed.

**Keywords:** systems approach, globalization, culture, organization, firm, sustainability, efficiency, resource, knowledge, innovation, social network, international SMEs, transnational entrepreneurship, strategy, learning, China, FDI, identity, life satisfaction, industrial restructuring, outsourcing, offshoring, pharmaceutical industry, financial crisis, and ethnography
ACKNOWLEDGEMENTS

This dissertation is dedicated to the memory of my college mentor Dr. Victoria J. K. Liu. Without the love and help from her and her husband, Ted, I seriously doubt I could get through those most turbulent times in my life. I also want to thank “LIUJW1,” who has been the lighthouse in my navigation for love and meaning of life over the past ten years. You led me to the first taste of complexity and uncertainty in the nature of life and cultivated my perseverance, patience, ingenuity and adaptiveness.

Certainly, I’m deeply grateful to my precious parents, who have given me the wholesome body and mind. Thank you for the way you have raised me up, where you always respect and value my opinions and choices and give me all the supports that you can give. You always encourage me to remember all those people who have helped, loved, and inspired me along the way and to return the favors and honor their wishes whenever and wherever I can. Thank you for this most important lesson in my early childhood.

As a matter of fact, I always consider I have more than one pair of parents in my life. Victoria & Ted are another one, so are Doug & Sylvia Ferdon and Robbin & Terry Cole, who have provided me the home away from home in the most spiritually and emotionally critical way during my six-year’s study and work in the United States. You have consolidated my passion to contribute my share to the well-being and peace of the world as a global citizen and human being. Especially Doug, though at a distance, you always seem to know at the first moment whenever my soul is in its weakest condition and warm it up in the most delicate and appropriate way. I think you are the angel sent to me by God and it is done so for a reason. Your generosity and
genuineness in giving and sharing withstand the test by the highest standards of humanity. I will continue to carry them on in the rest of my life as the legacy inherited from you.

I also greatly appreciate the world views and philosophies toward life and career the group of people below shared with me while assuming their respective roles. Though we only came across each other for a short moment in life, your inspirations and impacts on me last lifelong. I feel so blessed to become friends with many of you now. So I want to recognize your names here and the roles you assumed when we met:

Mary Yoko Brannen, Visiting Professor of Strategy and Management, INSEAD
Elaine Chao, America's 24th Secretary of Labor
Rick Kaplan, Executive Producer, CBS Evening News, former President of CNN-US, Senior Vice President for ABC News, and President of MSNBC
Rich Lavin, Group President, Construction Industries & Growth Markets, Caterpillar Inc.
Yip Kowk Wah, Founder and Chairman of the Hong Kong Policy Research Institute, former Special Advisor to Tung Chee Hwa, the first Chief Executive of the Hong Kong Special Administrative Region
Nan Zhou, Department Head of Marketing, City University of Hong Kong

In addition to these friends and mentors, a warm thank you is given to my wonderful roommates and schoolmates at Illinois, Anna Dugarova, Sai Lan, Mary Mahaffey, and Nannaphat Saenghong. I know distance won’t do us apart and our friendships will go on. The house I lived for four years in Urbana, IL will always live in my memory. You recorded all my laughters, tears, and sweats and witnessed the most crucial transitions on my growth and life path. The house is female-only and has ten bedrooms. Girls there are from all over the world, such as Thailand, Russia, India, Ethiopia, Belgium, China and the US. I think someday I will write a story about you and your inspirations.
The last but not the least, I’m sincerely grateful to all my dissertation committee members, Dr. McCarthy, Dr. Denzin, Dr. Berry and Dr. Lammers. Thank you so much for all your supports, encouragements, and patience on the intellectual evolution of my dissertation and academic life. Moreover, the second part of this longitudinal ethnographic research would not have existed without the grants from Illinois CIBER. Special thanks as well to my friends Dale Chen from North Carolina State University and Leland Jameson from the National Science Foundation for reading the earlier drafts of my dissertation chapters.

Again, thank you to all who have loved me and I have loved…
TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION ................................................................................................... 1
  1.1 Theorizing Globalization—Review the Debate ................................................................. 6
    1.1.1 Immanuel Wallerstein ............................................................................................... 6
    1.1.2 James Rosenau ......................................................................................................... 7
    1.1.3 Robert Gilpin .............................................................................................................. 7
    1.1.4 Samuel Huntington ................................................................................................... 8
    1.1.5 Arjun Appadurai ....................................................................................................... 8
    1.1.6 Ulrich Beck ................................................................................................................. 9
    1.1.7 Manuel Castells ......................................................................................................... 9
    1.1.8 Anthony Giddens .................................................................................................... 10
    1.1.9 David Harvey ........................................................................................................... 10
    1.1.10 David Held ............................................................................................................. 11
    1.1.11 Roland Robertson ................................................................................................. 11
    1.1.12 Saskia Sassen ......................................................................................................... 12
    1.1.13 Malcolm Waters .................................................................................................... 12
  1.2 Toward a New Theorizing of Globalization—the Resource-Based Systems Approach .... 13
    1.2.1 On Systems Paradigm ............................................................................................ 13
    1.2.2 Resource-Based Systems Approach to Theorizing Globalization ......................... 22
  1.3 Application of the Resource-Based Systems Approach to Organization of a Firm and Its
    Social Network .................................................................................................................. 37
    1.3.1 Resources ................................................................................................................. 38
    1.3.2 Knowledge ............................................................................................................... 41
    1.3.3 Uniqueness: Sustainable Competitive Advantage ..................................................... 46
    1.3.4 Social Network ........................................................................................................ 50
    1.3.5 Identity & Life ......................................................................................................... 55
    1.3.6 Innovation ................................................................................................................. 63

CHAPTER 2: METHODS ............................................................................................................ 67
  2.1 The Paradigm Beneath .................................................................................................. 67
  2.2 Data Collection & Analysis ......................................................................................... 71
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1 Interview</td>
<td>72</td>
</tr>
<tr>
<td>2.2.2 Participant Observation</td>
<td>76</td>
</tr>
<tr>
<td>2.2.3 Systems Analysis</td>
<td>78</td>
</tr>
<tr>
<td>2.2.4 Narratives and Discourse Analysis</td>
<td>80</td>
</tr>
<tr>
<td>2.3 The Entry Stories</td>
<td>84</td>
</tr>
<tr>
<td>2.3.1 First Entry in 2008--I Have a Job for You</td>
<td>85</td>
</tr>
<tr>
<td>2.3.3 Reflection on Being an Ethnographer</td>
<td>101</td>
</tr>
<tr>
<td>2.4 The Research Context—Value Proposition in Industries of Pharmaceuticals and CRO</td>
<td>105</td>
</tr>
<tr>
<td>CHAPTER 3: UNDERSTANDING THE FIRM</td>
<td>114</td>
</tr>
<tr>
<td>3.1 The History of the Enterprise and the Entrepreneur</td>
<td>114</td>
</tr>
<tr>
<td>3.2 The Uniqueness behind the Success</td>
<td>120</td>
</tr>
<tr>
<td>3.2.1 The Invisible Rules for People to Come and to Go</td>
<td>120</td>
</tr>
<tr>
<td>3.2.2 Financial Crisis</td>
<td>132</td>
</tr>
<tr>
<td>3.2.3 Business Development</td>
<td>134</td>
</tr>
<tr>
<td>3.2.4 Establishing Global Credibility and Legitimacy</td>
<td>137</td>
</tr>
<tr>
<td>3.3 Summary</td>
<td>140</td>
</tr>
<tr>
<td>CHAPTER 4: SOCIAL NETWORK-BASED GLOBAL RESOURCE INTEGRIFICATION</td>
<td>142</td>
</tr>
<tr>
<td>4.1 What Is Changing?</td>
<td>142</td>
</tr>
<tr>
<td>4.2 Who Caused the Change— Resource-Based Systems Approach to Globalization</td>
<td>147</td>
</tr>
<tr>
<td>4.3 Where Are the Ruptures — The “Official” Claim</td>
<td>150</td>
</tr>
<tr>
<td>4.3.1 Patent Expiration</td>
<td>154</td>
</tr>
<tr>
<td>4.3.2 FDA Raising the Bar</td>
<td>154</td>
</tr>
<tr>
<td>4.3.3 Purchasing Power Falls in the West</td>
<td>156</td>
</tr>
<tr>
<td>4.3.4 The Evolutionary Dynamics of Globalization at Work</td>
<td>157</td>
</tr>
<tr>
<td>4.4 The Restructuring of the Global Pharmaceutical Industry</td>
<td>159</td>
</tr>
<tr>
<td>4.4.1 The Pattern of Rebalancing</td>
<td>160</td>
</tr>
<tr>
<td>4.4.2 Innovations</td>
<td>164</td>
</tr>
<tr>
<td>4.4.3 Global Geographic Diversification of Industrialization</td>
<td>165</td>
</tr>
<tr>
<td>4.5 The Progressive Positioning of China in Global Resource Integration</td>
<td>168</td>
</tr>
</tbody>
</table>
CHAPTER 1: INTRODUCTION


“When globalization is viewed as an economic phenomenon, the means of production, exchange, distribution, and consumption are highlighted, neoliberalism ideology is seen to permeate society, the world market dominates, and transnational links often transcend and supplant nation-states. When globalization is viewed as a political phenomenon, the exercise of power, coercion, surveillance, and control over people and territories is paramount. When it is conceived as a cultural phenomenon, symbolic exchange through rituals, everyday practices, mass media, face-to-face communication, and cultural performances are central. The intensification of global consciousness, reflexivity, perceptions of risk, the struggle for identity, and community are overriding features of this approach” (p. 231).

While Stohl did the sortation by the perspectives from which the phenomenon was perceived, Anthony McGrew handled it according to the number of causes of globalization and

The conceptual frameworks that embed our perceptions and their interpretations, and condition the depth of our awareness and its rise to consciousness, are shifting drastically as the nature of human relations transforms. Disciplinary efforts to interpret the meaning and significance of social change run the gamut of deconstructionist post-modern exposition, ranging from predictive/empirical, to cultural/interpretative to critical/post-structural epistemological stances. In areas of human endeavor concerned with valuing and assessing human achievement, the result has been a multiplicity of possible interpretive frameworks and a concomitant fragmentation of disciplinary worldviews (p.3).

As people from different professions and disciplines come to explore the topic of globalization, consciously or subconsciously, they come with a stance that emphasizes their own backgrounds or areas of study and tend to simplify the theorization accordingly. A holistic and trans-disciplinary view is often lacked. As Ervin Laszlo and his colleague suggested, “observed phenomena in the natural and man-made universe do not come in neat disciplinary packages labeled scientific, humanistic, and transcendental: they invariably involve complex combinations of fields, and the multifaceted situations to which they give rise require a holistic approach for their solution” (Laszlo & Laszlo, 1997, p.2).
If we see the world as a social ecosystem, extant perspectives on theorizing globalization each focus on one component of the system, be it economics, politics, culture, or technology etc., often insufficient to capture the dynamics and synergistic relationships among different actors in the process of globalization. It is as if we could never know the truth and richness of life if we only look at organs in isolation. In view of our limited cognitive capacity and the consequent bounded rationality (Simon, 1991), we humans live in a world that is overwhelmingly complex for us to comprehend.

As practiced in the methodologies of classical science, simplification in the form of reduction to components is inevitable. When a decision or a policy was so made without holistic thinking, however, the cost to address the side effects at a later time could be too high to afford. As Ulrich Beck (1992) described in his risk society, that many developed countries came to learn the hard way the importance of environment protection, resource sustainability and nuclear control while developing their economies and societies is such an example. Therefore, in my dissertation, I call for a holistic mindset and an integrative framework to understand globalization and organization of human activity systems in general, and to tackle the related problems and constraints with an informed understanding of the systemic complexity and their increased interactions.

The first objective of my research is to pioneer such a trans-disciplinary paradigm to the study of globalization, namely, the resource-based systems approach. Integrating theories from organization, ecology, business, economics, sociology, history, archeology, and communication (Burt, 1992; Childe, 1956; Christian, 2004; Grant, 1996; Hardin, 1968; Nelson & Winter, 1982; Penrose, 2009; Redding, 1993; Sassen, 2008; and Stohl, 2001) under the framework of systems thought (von Bertalanffy, 1968; Laszlo, 1991, 1993; Parsons, 1951, 1971, 1982, 1991; and Simon,
1991), this approach views the world as a system composed of various layers of subsystems (nations, institutions, industries, organizations, ethnicities, communities, families and individuals, etc.), much like the ecosystem in the natural sense. But this one is of social nature. It evolves based on the principles of organized complexity (Laszlo & Laszlo, 1997), which are embodied by the dynamics and interrelationships—the social ecology—among components of the system or the subsystems. This approach sees globalization as the emergent pattern of the resource organizing dynamics of the global ecosystem including human activity systems and their wider context of life support systems. In other words, the homogenizing and complicating effect globalization is observed to exert today is only an emergent property of the global ecosystem, which might not always display at the local organization of its subsystems or components where evolution might go in the direction of diversity or decrease in complexity.

As the second objective of my dissertation, the resource-based systems approach to theorizing globalization is further elaborated ethnographically through a case study of the outsourcing sector of the US-based global pharmaceutical industry. Through participant observation, I longitudinally examined a firm in this industry—a transnational Contract Research Organization (CRO) company run by a first generation Chinese-American immigrant. Typical of contemporary transnational small and medium-sized enterprises (SMEs) and entrepreneurship (Dev et al., 2002; Knight & Kim, 2009; Lin, 2001a; Lin, 2001b; Oviatt & McDougall, 2005; Peng, 2001; Penrose, 2009; Powell, 1992; Saxenian, 2006; and Zhou et al., 2007), the firm is examined regarding the efficiency of its resource organizing dynamics as demonstrated in the innovations and controversies in its production and communication activities. To illustrate its role in the global process of resource integration, value creation, and knowledge flow, I then escalated the analysis to events and activities taking place at system levels vertically
and horizontally along the continuums where the level of a firm is at the center. These systems as a whole form the social network of the firm. Specifically, they each contextualize the industrial evolution of the CRO business and the restructuring of the pharmaceutical industry, the professional and personal life history of the Chinese diaspora, China’s culture-based economic and social development mode, as well as other global economic events, in particular, the recent world financial crisis. As a result, I systemically displayed the evolutionary dynamics of globalization in organizing resources worldwide and transforming entities and processes vertically across the interacting transnational, national, institutional, industrial, organizational, ethnic, communal, familial and individual levels. I also addressed the innovations and controversies evolved horizontally within the interlocked cultural, historic, social, economic, political, and technological dimensions. Chapter 3 and Chapter 4 of this dissertation will focus on this objective.

Unfolded in Chapter 5, the third goal of my dissertation is to record the discourse of globalization in its contemporary reality as observed in my ethnographic research. Transcripts will be selectively documented for people’s life histories captured in my interviews with subjects as well as conversations in other forms of communication.

In the remaining of this chapter, I will first briefly review and introduce the key theories in globalization studies, building upon both Stohl and McGrew’s exemplary works (McGrew, 1996; Stohl, 2001). I will then propose the resourced-based systems approach to theorizing globalization and discuss how my approach integrates and complements the existing theses. At the same time, I will discuss and define the key analytical constructs under this approach, while demonstrating how the trans-disciplinary nature of the systems approach draws and bridges concepts and theories from different fields. After that, the key definitions, namely, resource,
knowledge, uniqueness, social network, identity, life and innovation, will be discussed at the systems levels centering around a firm (Burt, 1992; Grant, 1996; Nelson & Winter, 1982; Penrose, 1959; Spender, 1989; Wernerfelt, 1984), especially in the case of transnational SMEs and entrepreneurship. Discussion will focus on how they will be applied to and operationalized to analyze and to answer questions specific to the research case that follows.

Chapter 2 focuses on the methodological paradigm and techniques used in my research. It also records the stories of my two entries to the research site, as well as my reflection as an ethnographer. To facilitate the understanding of the research context, the working mechanisms of both the pharmaceutical and CRO industry are also introduced in Chapter 2.

Chapter 3, 4 and 5, each serve to answer one of the three sets of research questions, but not in an absolutely mutually exclusive way, as influenced by the constitutive nature of systems analysis under the resource-based systems approach I propose.

In the last chapter, I will summarize all my research findings and discuss their implications in relation to the resource-based systems approach to theorizing globalization, organization and life, especially for policy-making. I will also discuss the limitation of my study and make suggestions for future research.

1.1 Theorizing Globalization—Review the Debate

This section will cover the key theorizations of globalization represented by 13 scholars from various fields. The first four belong to the single cause camp by the definition of Anthony McGrew (1996), while the other nine more or less take a multi-causal approach.

1.1.1 Immanuel Wallerstein
Wallerstein favors an economic approach where he thinks capitalism powers the process of globalization (Wallerstein, 1984). He introduces the concept of “world system,” sustained by the division of three functions in the world economy (central, semiperipheral, and peripheral). This division reinforces the global inequalities of power and wealth, Wallerstein insists, and thus the world system is destined to collapse (Wallerstein, 1991).

1.1.2 James Rosenau

From a political perspective of view, Rosenau (1990) distinguishes the current age of postinternational politics from the age when nation-states monopolized the international arena. In other words, a polycentric distribution of power where various transnational and national actors compete or cooperate with one another, has replaced the monocentric power structure of rival nation states.

In addition, Rosenau sees technology as the root of the passage from the monocentric to polycentric international politics, the process of which he terms “globalization.” In his view, “It is technology…that has so greatly diminished geographic and social distances through the jet-powered airliner, the computer, the orbiting satellite, and the many other innovations that now move people, ideas and goods more rapidly and surely across space and time than ever before. It is technology that has profoundly altered the scale on which human affairs take place…It is technology, in short, that has fostered the interdependence of local, national and international communities that is far greater than any previously experienced” (Rosenau, 1990, p.17).

1.1.3 Robert Gilpin

Inspired by the orthodox in international relations studies, Gilpin asserts that:
“My position is that a hegemon is necessary to the existence of a liberal international economy. [...] historical experience suggests, that in the absence of a dominant liberal power, international economic cooperation has been extremely difficult to attain or sustain and conflict has been the norm. [...] The expansion and success of the market in integrating modern economic life could not have occurred without the favorable environment provided by the liberal hegemonic power” (Gilpin, 1987a, pp. 88, 85).

1.1.4 Samuel Huntington

In his article “The Clash of Civilization?” (1993), Samuel Huntington points out that, since culture assumes less mutability than politics and economics, cultural differences, rather than ideological or economic variations, determine the dominating source of conflict in the new world.

1.1.5 Arjun Appadurai

As imagination is emphasized in his theory of globalization, Appadurai (1997) analyzes this phenomenon through five dimensions of global cultural flows: ethnoscapes, mediascapes, technoscapes, financescapes, and ideoscapes. He also depicts insightfully how the disjunctures among those -scapes influence nation-states.

“States throughout the world are under siege, especially where contests over the ideoscapes of democracy are fierce and fundamental, and where there are radical disjunctures between ideoscapes and financescapes (as in countries such as Mexico or Brazil, where international lending influences national politics to a very large degree); or between ideoscapes and ethnoscapes (as in Beirut, where diasporic, local, and translocal filiations are suicidally at battle); or between ideoscapes and mediascapes (as in many countries in the Middle East and Asia) where lifestyles represented on both national and international TV and cinema completely overwhelm and undermine the rhetoric of national politics (Appadurai, 2004, p.106).
The globalization of culture is not the same as its homogenization, but globalization involves the use of a variety of instruments of homogenization (armaments, advertising techniques, language hegemonies, and clothing styles) that are absorbed into local political and cultural economies, only to be repatriated as heterogeneous dialogues of national sovereignty, free enterprise, and fundamentalism in which the state plays an increasingly delicate role: too much openness to global flows, and the nation-state is threatened by revolt…; too little, and the state exits the international stage, as Burma, Albania, and North Korea in various ways have done” (Appadurai, 2004, p.108).

1.1.6 Ulrich Beck

Ulrich Beck (1992) introduces the concept of risk society in late modernity. Different from other authors in the discussion of globalization, Beck does not “assume the existence of purposive actors and institutions;” instead, as the side-effects of industrial societies, human decision leaves unintended consequences, risks and threats (Beck, 2000, p.38). These risks are simultaneously created and socially-normalized by leading economic, political, legal and administrative institutions—a situation that endanger the survival of humankind.

For Beck, three kinds of global threats create global society. The first two are dangers of normality, namely, ecological destruction and technological-industrial dangers caused by affluence (such as greenhouse effect), and by poverty (such as the depletion of the tropical rainforest), compared to the third type of threat from the possible use of weapons of mass destruction in exceptional situation of war or private terrorism.

1.1.7 Manuel Castells

Manuel Castells’s theory resolves around network and informational societies (1996, 1997). In informational society, “information generation, processing, and transmission become
the fundamental sources of productivity and power because of the new technological conditions emerging” (see Stohl, 2001, p.234). A global information network redefines the social and technical relationships of production, culture, and power.

1.1.8 Anthony Giddens

For Giddens, as consequences of modernity, globalization is understood through four dimensions: capitalism—capitalist world-economy; the inter-state system—universalism of the nation-state; militarism—globalizing of military power; and industrialism—global division of labor (Giddens, 1987, 1990). Globalization features “time-space distanciation” (Giddens, 1990, p.14), “the conflation of presence and absence through systemic interlocking of the local and the global” (See McGrew, 1996, p.471). It is “a process of uneven development that fragments as it coordinates” (Giddens, 1990, p.175).

1.1.9 David Harvey

Harvey (1989) situates globalization in the “post-modern condition,” which has its genealogical origin in Marx’s account of capitalism, and constructs it as the intensification and speeding up of “time-space compression” (Harvey, 1989, p.240). According to Harvey, “…we have been experiencing, these last two decades, an intense phase of time-space compression that has had a disorienting and disruptive impact upon political-economic practices, the balance of class power, as well as upon cultural and social life” (Harvey, 1989, p.284). When talking about the features of postmodernity, Harvey writes,

“Postmodern concerns for the signifier rather than the signified, the medium (money) rather than the message (social labour), the emphasis on fiction rather than function, on
signs rather than things, on aesthetics rather than ethics, suggest a reinforcement rather than a transformation of the role of money as Marx depicts it” (Harvey, 1989, p.102).

1.1.10 David Held

While Gilpin (1987a) is asserting the status of nation-state in international politics, Held (1995) observes that national politics has been losing its core power. For Held and his colleagues (1999), discussion on globalization delineates spatio-temporal dimensions of globalization, featuring constructs, such as the extensity of global networks, the intensity of global interconnectedness, the velocity of global flows, and the impact propensity of global interconnectedness. Held writes,

“The ‘disjunctures’ reveal a set of forces which combine to restrict the freedom of action of governments and states by blurring the boundaries of domestic politics, transforming the conditions of political decision-making, changing the institutional and organizational context of national politics, altering the legal framework and administrative practices of governments and obscuring the lines of responsibility and accountability of national states themselves. These processes alone warrant the statement that the operation of states in an ever more complex international system both limits their autonomy (in some spheres radically) and impinges increasingly upon their sovereignty. Any conception of sovereignty which interprets it as an illimitable and indivisible form of public power – entrenched securely in individual nation-states – is undermined. Sovereignty itself has to be conceived today as already divided among a number of agencies – national, regional and international – and limited by the very nature of this plurality” (Held, 1995, p.135).

1.1.11 Roland Robertson

By introducing the concept of globcalization, Robertson (1997) denies the presupposition that globalization is an overwhelmingly macrosociological phenomenon featured by its
homogenizing effects as proposed in Giddens’ theory of modernity based on instrumental rationality (Giddens, 1999). Instead, Robertson (1997, p.35) argues that,

“…globalization, defined in its most general sense as the compression of the world as a whole, involves the linking of localities. But it also involves the ‘invention’ of locality, in the same general sense as the idea of the invention of tradition (Hobsbawm and Ranger, 1983), as well as its ‘imagination’”(cf. Anderson, 1983).

1.1.12 Saskia Sassen

Saskia Sassen (2000, 2001, 2002) uses spatialities and temporalities as elements of theorization. Similar to Harvey (1989), she also addresses the interaction between the sectors of manufacturing and finance. In her view, opportunities grow out of the uneven temporalities of economic activities, where the production of profits in the financial sector is much faster than that in the manufacturing sector (Sassen, 2000). In one of her most recent books on globalization, Sassen (2008) talks about the deep structure of contemporary world society as complex ecologies within relational systems. Her perspective discerns the driving forces, organizational logics, hidden patterns and social innovations in the organization of human activity and the restructuring of world society, so as to better understand and predict the history of globalization and optimize our capacity to proactively engage with those processes of systemic transformation. Different from the dominant globalization narratives, Sassen’s theory emphasizes that nation building and globalization can coexist.

1.1.13 Malcolm Waters

Broadly consistent with the work of Robertson and of Giddens, Malcolm Water’s thesis of globalization (1995) proposes that, “material exchanges localize; political exchanges
internationalize; and symbolic exchanges globalize” (p. 20). In other words, “as a given sector of social life moves from a predominance of material through power through symbolic relationship the tendency will be towards globalization” (p.91). Taking the Japanization of organizational practices as an example of the culturalization of economic life, Waters thinks “the key globalizing flows are less material and more cultural in character” (p.84), and that globalization is a reflexive phenomenon, where people intentionally look to reconstruct themselves or their groups in globalized forms. Especially in the business realm, Waters writes,

“In part this is the consequence of business-to-business advertising that often stresses the importance of global consciousness and it is in part a reflection of the preachings of business schools but it is also a response to feelings of relative powerlessness in the face of globalized events that appear to be beyond one’s control” (p.85).

I agree that the approach held by the “single cause school” has fundamentally contributed to decomposing the complex dimensions of the process of globalization, and thus has facilitated its understanding. However, my study of globalization aligns with the “multi-causal logic,” integrating economic, cultural, political and historical perspectives (Parsons, 1951), so as to provide a more comprehensive and more applicable view when it comes to policy-making. As Nelson and Winter (1982b) have argued, “the ability of a theory to illuminate policy issues ought to be a principal criterion by which to judge its merit” (p. 372).

1.2 Toward a New Theorizing of Globalization—the Resource-Based Systems Approach

1.2.1 On Systems Paradigm

In describing the context of the emergence of the systems approach, Ludwig von Bertalanffy wrote:
The 19th and first half of the 20th century conceived of the world as chaos. Chaos was the oft-quoted blind play of atoms, which, in mechanistic and positivistic philosophy, appeared to represent ultimate reality, with life as an accidental product of physical processes, and mind as an epi-phenomenon. It was chaos when, in the current theory of evolution, the living world appeared as a product of chance, the outcome of random mutations and survival in the mill of natural selection. In the same sense, human personality, in the theories of behaviorism as well as of psychoanalysis, was considered a chance product of nature and nurture, of a mixture of genes and an accidental sequence of events from early childhood to maturity.

Now we are looking for another basic outlook on the world -- the world as organization. Such a conception -- if it can be substantiated -- would indeed change the basic categories upon which scientific thought rests, and profoundly influence practical attitudes.

This trend is marked by the emergence of a bundle of new disciplines such as cybernetics, information theory, general system theory, theories of games, of decisions, of queuing and others; in practical applications, systems analysis, systems engineering, operations research, etc. They are different in basic assumptions, mathematical techniques and aims, and they are often unsatisfactory and sometimes contradictory. They agree, however, in being concerned, in one way or another, with "systems," "wholes" or "organizations"; and in their totality, they herald a new approach. (As quoted in Lilienfeld, 1978, pp. 7-8.)

Growing out of organismic biology while going beyond the hard sciences, the trans-disciplinary endeavor of the systems approach soon spread to the humanities (Laszlo & Krippner, 1998). Aware of the potential of forming a general science of organized complexity, pioneers such as Ludwig von Bertalanffy, Alfred North Whitehead, and biologist Paul A. Weiss aimed to develop "unifying principles running ‘vertically’ through the universe of the individual sciences" (Von Bertalanffy, 1968, p. 38.). The effort was later joined by economist Kenneth Boulding,
mathematician Anatol Rapoport, and physiologist Ralph Gerard, whose thoughts also converged on the principles of organization manifested in both the systems of society and nature.

In fact, out of the prominent globalization theorists reviewed earlier in this dissertation, it is not difficult to find the traces of systems thought in the theses of authors such as Wallerstein (1984, 1991), Held (1995), Robertson (1997) and Sassen (2008). They apply, in one way or another, the concepts of system, whole, or organization to their theorizations. Among them, Sassen’s piece is the most salient as it employs the analytical elements of capabilities, tipping points, and organizational logics when depicting a global system of seemingly infinite complexity (Sassen, 2008). Its connection to systems sciences would prove even more apparent once we gain a further understanding of the concept of system and the essence of principles of organization. Regarding this, Laszlo and Laszlo (1997) summarize:

In the broadest conception, the term (system) connotes a complex of interacting components together with the relationships among them that permit the identification of a boundary-maintaining entity or process…whether formal (e.g., mathematics and language), existential (e.g., 'real-world'), or affective (e.g., aesthetic, emotional, and imaginative)…

...If any set of events in the physical universe is to conserve an identifiable set of internal relations it must be capable of at least temporarily withstanding the statistical outcome of disorganization predicted by the second law of thermodynamics. That law states that "entropy always increases in any closed system not in equilibrium, and remains constant for a system which is in equilibrium." (The Fontana Dictionary of Modern Thought, Alan Bullock and Oliver Stallybrass (eds.), London: Fontana/Collins, 1977, p. 634.) Systems will dissipate energy unless they are purposively maintained by an outside agency; thus there must be organizing forces or relations present which permit the conservation of its structure (and function). Internal relations in an entity not possessing such characteristics tend to degrade until a state of thermodynamic equilibrium is reached.
…An entity that does not degrade its structure to thermodynamic equilibrium but maintains it through the utilization of the energies available in its environment is a product of the slow but vast processes of evolution in nature. It has emerged in the course of time, maintains itself in the face of perturbations, and is capable of reorganizing itself to cope with changing conditions in its environment. Such an entity is a natural system.

…almost all the things we can identify as 'the furniture of the earth' are natural systems, or components of natural systems, or aggregates formed by natural systems. Stable atoms are natural systems, and so are molecules, cells, multicellular organisms, ecologies and societies. Complex socio-cultural systems, and indeed the global system itself, form natural (rather than artificial) systems.

…Structurally, a system is a divisible whole, but functionally it is an indivisible unity with emergent properties. An emergent property is marked by the appearance of novel characteristics exhibited on the level of the whole ensemble, but not by the components in isolation...it is…a result of the synergistic relationship among its (the system’s) parts (Laszlo & Laszlo, 1997, p.6-9).

In addition to the concept of system, another one that is key to the trans-disciplinary application of systems sciences is the concept of entropy, commonly associated with the amount of disorder or chaos.

Thermodynamic entropy has the dimension of energy divided by temperature: \( \Delta S = \frac{\delta q_{rev}}{T} \), where \( \Delta S \) is the entropy change of the system, \( \delta q_{rev} \) is the amount of heat received by the system, and \( T \) is its absolute thermodynamic temperature of the system at the point of the heat flow (Atkins & De Paula, 2006). According to the second law of thermodynamics, unless external forces intervene, the spontaneous direction of the flow of thermal energy within a closed system is always from the area of high temperature to that of low temperature. In the form of
heat, this amount of thermal energy dissipates, no longer useful as convertible energy to do thermodynamic work of value for the given system, such as those done by energy conversion devices like the refrigerator or the air conditioner. Therefore, entropy can also be described qualitatively as a measure of the dispersal of useful energy at a specific temperature, or simply, energy dispersal.

However, the heat always makes a bigger contribution to the increase of entropy of the low temperature area than to the decrease of entropy of the high temperature area, due to the difference in the denominators of the entropy change equation above in the last paragraph. As a result, for a closed system, its net entropy will always increase as long as there is a temperature gradient. This also applies to other intensive variables (system properties independent of the system’s size) such as pressure and density. A gradient exists when there is a spatial difference or inequality in any of these intensive variables, where entropy tends to increase until equilibrium (the state of maximized entropy) (Kay, 2002). Therefore, unlike energy, entropy is non-conserved and could be deemed as a measure of the tendency of a process or the irreversibility.

For an open system, the flow across the system boundary could be heat, work, or mass. But only heat flow and mass flow cause a change in the entropy of the system. The rate of entropy change is expressed in the following equation (Sandler, 1989):

\[
\frac{dS}{dt} = \sum_{k=1}^{K} \dot{M}_k \dot{S}_k + \frac{\dot{Q}}{T} + \dot{S}_{gen}
\]

where
\[
\sum_{k=1}^{K} \dot{M}_k \dot{S}_k
\]

is the net rate of entropy flow due to the flows of mass into and out of the system (where \(\dot{S}\) = entropy per unit mass).

\[
\frac{\dot{Q}}{T}
\]

is the rate of entropy flow due to the flow of heat across the system boundary.

\(\dot{S}_{gen}\) is the rate of entropy production within the system.

This equation shows that, for an open system, entropy production is not necessarily equivalent to energy dissipation when there are other modes of energy transfer or thermal dissipation routes than that of heat transfer, for instance, mass flow. It also demonstrates how an open system’s entropy can be lowered by external actions, withstanding the second law of thermodynamics dictating closed systems.

Despite of the above-mentioned differences between an open system and a closed system, the second law of thermodynamics still applies when the universe composed of the system and its environment is taken into account. Take the refrigerator as an example--the local entropy decrease within a system (the cold chamber of the refrigerator), is only possible at the expense of the entropy increase in its environment (the surroundings of the refrigerator). The net entropy in the universe (the refrigerator and its surroundings as a whole) increases in the end.

With regard to the microscopic aspect of a system, the statistical definition of entropy was developed as a measure of the number of ways in which a system may be arranged, alternatively, a measure of flexibility or disorder. The more the types of arrangement of its constituents are available to a system with appreciable probability, the more disordered or more flexible the system is and the greater its entropy. More specifically, the statistical interpretation of entropy defines it as being proportional to the natural logarithm of the number of possible
microscopic configurations of the individual components (microstates) that could give shape to
the observable macroscopic state (macrostate) of the system, in other words, a logarithmic
measure of the density of states. See below:

\[ S = -k_B \sum_i P_i \ln P_i , \]

where \( k_B \) is the Boltzmann constant, equal to \( 1.38065 \times 10^{-23} \) J K\(^{-1}\). The summation is over all the
possible microstates of the system, and \( P_i \) is the probability that the system is in the \( i \)th
microstate (Frigg & Werndl, 2010). A microstate specifies all component details about the
system including the position and velocity of each component, the portion of information about
the system that would otherwise remain uncertain if only the observable macroscopic
properties/variables (a.k.a. thermodynamic variables or state variables) such as temperature,
pressure and volume, were under consideration. Therefore, a more general interpretation of
entropy is a measure of uncertainty about a system. Apparently, the interpretative model based
upon the observer’s cognitive capacity and perception of the system epistemologically plays a
central role in this definition of entropy. This has a significant importance in the design of
experimental methods where the concept of entropy or its metaphor is to be applied. To whom
and what it means for a state to be macroscopic or observable need to be well defined (Jaynes,

A similar microscopic perspective by Onsager (1931) explains that, all the
thermodynamic macroscopic variables constitute inexact specifications of the motions and
interactions of microscopic components of a system. Manifested as thermodynamic forces
generating apparent thermodynamics fluctuations, these inexactitudes of specifications of the
microscopic initial conditions of a natural system drive the formation of a more reproducible
non-equilibrium dynamical structure within the system. Because of the increased probability of
being reproduced, macroscopically, the global patterns of the system’s organizing dynamics emerge and the system therefore appears to be more stable, more coherent and more ordered. Entropy is accordingly deemed as a measure of reproducibility of dynamical structure or process. Statistically, it tells how many times a process would have to be repeated in order to expect to see a departure from the usual reproducible result (Jaynes, 1957). A decrease of a system’s entropy means an increase in the reproducibility of the emergent structure, while apparent thermodynamic fluctuations are fading. As a result of this transformation, the system’s stability, coherence and order increases.

The 1977 Noble Chemistry laureate Ilya Prigogine interprets this change process as the self-organizing nature of any non-equilibrium nonlinear dynamical system (Glansdorff & Prigogine, 1971)—a natural system’s evolutionary capabilities to lower its entropy through reorganization in face of fluctuation or perturbation, such as the complex homeostatic regulations performed by our autonomic nervous system (Emerson, 1956; Laszlo & Laszlo, 1997).

According to the principle of least action (Youssouf & Guran, 2000), microscopically, system spontaneously calculates the path which will use least effort for the motions and interactions of its elements and self-organizes to decrease the average action per element per unit motion. The state of a system with least average sum of actions of its elements or zero variation of the total action is defined as the attractor for the continuous self-organization and evolution of a dynamical complex system. For an open system with constant inflow and outflow of mass and energy, its least action state (the attractor) is constantly reevaluated and is therefore never reached, but the system always tends toward it (Georgiev, 2012; Georgiev & Georgiev, 2002).

Following the statistical definition of entropy, the specifications of a system’s microstate—the position and velocity of each element—represent the constraints of a system, which give
shape to its organizational structure and determine the sum of the actions of its elements. Decreased average action of each element consumes less energy to interact with the constraints; the organizing dynamics of the system becomes more efficient and its organization appears more coherent. On the other hand, increased average action destabilizes the system and above certain limit of stability the system falls apart. For a completely disorganized system, its entropy is at a maximum. Therefore, the efficiency of a system’s organizing dynamics decides its degree of self-organization or the evolutionary capability of an organization (Georgiev, 2012; Georgiev & Georgiev, 2002).

For an open system, destabilizing fluctuations may come from two kinds of thermodynamic forces: 1) the microscopic inexactitudes induced by internal entropy which happen to any system whose entropy is not zero; and 2) external forces from the environment due to any change in the gradient of the intensive variables (temperature, pressure, and density, etc.) between the system and its surroundings. Either lack of resources supply or huge influx of energy would break the dynamic stability previously achieved (Kondepudi & Prigogine, 1998).

Prigogine suggests that, once a non-equilibrium nonlinear system weathers through the period of apparent thermodynamic fluctuations when the thermodynamic properties are indeterminate, the system reaches a steady state at which the rate of its internal entropy production due to irreversible processes becomes a minimum. The emergent patterns of the system’s organizing dynamics at this state are called dissipative structures. This is Prigogine’s famous minimum entropy production principle and dissipative structure theory (Glansdorff & Prigogine, 1971), which is often seen as a bridge between natural sciences and social sciences.

However, Prigogine’s steady state is different from the attractor based on the principle of least action. The former speaks to a system whose rate of internal entropy production is at a
minimum, while the system itself in the latter case has the minimal internal entropy. In other words, for the steady state, its internal entropy may stop increasing at a particular time but may not be the least to sustain its organization and to evolve over time. The evolutionary process might require a system to experience through a series of steady states on its way toward the attractor. Although both states appear to be stable, compared to the attractor, the steady state whose internal entropy might still be high, is therefore more subject to disorganization because of the more intense thermodynamic fluctuations and to environmental changes whose forces may counteract or intensify the internal sourced fluctuations. On the other hand, the attractor is more prone to sustain its structure and maintain its identification during evolution and therefore has a higher degree of evolutionary capabilities. In other words, the stability at the minimal rate of internal entropy production is comparative and fluid, while a system’s internal entropy—the efficiency of its organizing dynamics decides its sustainability.

In essence, the principles of organization refer to a natural system’s evolutionary capabilities to self-organize in terms of reducing its internal entropy or increasing the efficiency of its organizing dynamics—the principle of self-organization.

1.2.2 Resource-Based Systems Approach to Theorizing Globalization

To apply systems sciences to the development of societies, Ervin Laszlo (1991, 1993) developed the general evolutionary systems theory.

Through the notion of 'bifurcations' (nonlinear and often indeterminate transitions between system states), evolutionary systems theory refers to conditions that prevail when societies are destabilized in their particular time and place. They then either reorganize their structures to establish a new dynamic regime that can cope with the original perturbations, or disaggregate to their individually stable components. Bifurcations are revolutionary transformations in the development of society. The reins of
power change hands, systems of law and order are overthrown, and new movements and ideas surface and gain momentum. When order is re-established, the chaos of transformation gives way to a new era of comparative stability.

Societal bifurcations can be smooth and continuous, explosive and catastrophic, or abrupt and entirely unforeseeable. However, they always describe the point at which a social system traverses a period of indeterminacy by exploring and selecting alternative responses to destabilizing perturbations (Laszlo & Laszlo, 1997, p.17).

Here “bifurcation” is obviously an analogy to Sassen’s “tipping point,” the space-time moment at which relational systems are transformed. The “organizational logics” in her thesis have the same essence as the principles of organization (Sassen, 2008). Maybe I should not say I pioneered the systems approach to the study of globalization. However, the differences between Sassen’s thesis and mine are 1) her discussion emphasizes the continuum between the national and the global, while I propose to apply the systems approach toward various layers of evolutionary entities and processes of the global ecosystem (Laszlo, 1991, 1993); and 2) Sassen focuses on the contemporary world, while I suggest a big history framework under which globalization in the world of humanity can be traced back to the early human migrations out of Africa if not earlier (Christian, 2004). In these regards, I think my theorization better echoes the holistic and evolutionary paradigm of the systems approach (Laszlo & Laszlo, 1997).

Moreover, using the comparative stability as a criterion for the well-being of a system is a core assumption of many researchers (Kay, 2002). However, I suggest the health or well-being of a natural system in evolution is more related to its sustainability, which considers the effects of the system’s interaction with its environment on the change of internal entropy instead of its internal entropy production alone. Comparative stability refers to the reproducibility of a steady
state at a particular time, while sustainability is a time-derivative concept. The well-being or health of a system, in my opinion, should also refer to a quality that withstand the test of time. As the equation of the rate of entropy production for an open system mentioned earlier shows us,

\[
\frac{dS}{dt} = \sum_{k=1}^{K} \dot{M}_k \dot{S}_k + \frac{\dot{Q}}{T} + \dot{S}_{\text{gen}}
\]

the entropy change within the system is always associated with a change of entropy at its environment to a degree that depends on the macroscopic state of the environment such as temperature \( T \). For a non-equilibrium open system, not only is its stability subject to the spontaneous internal thermodynamic fluctuations, but also is vulnerable to the even less predictable environmental perturbations when the entropy exchange between the system and its environment is unable to sustain the system’s stability. Therefore, a natural system’s fitness within its embedding environment is vital to its health and well-being—this is also the holistic thinking the systems approach stresses.

The application of systems approach to the humanities advocates a proactive and practical orientation that humans should develop conscious evolutionary strategies and design normative imperatives that integrate individual human emancipation (including the physical, mental, and spiritual needs of human beings) with an informed understanding of evolutionary dynamics in our societal and natural environments to guide the sustainability of our humanity (Laszlo & Laszlo, 1997). I am in line with this orientation in developing my theorization on globalization.

In fact, this orientation has long been advocated more than 2500 years before in one of the most influential philosophies of Chinese culture—Taoism. Taoism emphasizes the ultimate truth in nature and the underlying natural order, which is encouraged to be searched for and worked with in building organizations and societies (Redding, 1993). It suggests that, as much
power in nature is subtle and not reliant on obvious forces, a society could benefit from the principle of *wu-wei*, or active not-doing (Redding, 1993, p.50). This is because human actions arising from our ignorance of or uncertainty about our surroundings and our relations with them may create constraints to the self-organization of the systems or organizations where humans are embedded as a part. Over-consumption of resources is such an example. As a demonstration of nature’s self-organizing mechanism, the responses generated from the environment to correct those actions in return will have an impact on the stabilities of human activity systems. In this regard, Taoism’s principle of *wu-wei* echoes the principle of least action in physics.

Now we know that the natural order of evolution or self-organization is to increase the efficiency of a system’s organizing dynamics. Theoretically, the efficiency could be defined as the ratio of the rate (time derivative) of the internal entropy decreased by external forces such as energy, information or mass exchanges between the system and its environment (the values created within the system due to the dynamics of how resources are organized) to the rate of the entropy increase at the environment caused by the maintenance of the system. For a resource-based open system, this definition could be broadly expressed as the rate of resources the system produces divided by the rate of resources supplied to the system by its environment. Under the resource-based view, resource has an integrated connotation of energy, mass, information or anything of value to the existence of the system.

Back to the center of this dissertation though, how can we operationalize the measure of the efficiency of organizing dynamics for systems under the impact of humanity and apply the principle of self-organization to the development of global ecosystem and its subsystems to enhance their well-being and sustainability?
The answers are by no means easy to obtain. The interactions among merely a handful of particles and forces comprising an atom require multidimensional spaces for adequate modeling. Human organism, composed of some five octillion atoms, can overwhelm any conceivable method or instrument of calculation. To consider in details social systems’ interdependence with natural and artificial systems, the number of factors and variables surpasses the capacity of any extant heuristic system or calculating device, adding to the basic difficulty regarding boundary identification (Laszlo & Krippner, 1998).

The general evolutionary systems theorists suggest that the evolutionary trend in the universe constitutes a “cosmic process” that applies to all aspects of change in complex open dynamic systems with a throughput of information and energy. This “cosmic process” specifies “the convergence of existing systems on progressively higher organizational levels, the increasingly efficient exploitation by systems of the sources of free energy in their environment, and the complexification of systems structure in states progressively further removed from thermodynamic equilibrium” (Laszlo, Masulli, Artigiani & Csanyi, 1993, as quoted from Laszlo & Laszlo, 1997, p.18).

I am not sure if the cosmic convergence and complexification are necessary to identify an evolutionary process, the same way as Sassen questions the dominant globalization narratives about the dissolution of nation-states as victims of globalizing forces (Sassen, 2008). Theories of cultural evolution and social evolution suggest that sociocultural transformation could be accompanied by decreases of complexity (degeneration) or insignificant changes of sociocultural complexity (cladogenesis) (Korotayev, 2004). In addition, when defining natural systems, systems theorists also state that general propositions of natural systems should be true “regardless of their size, origin, and degree of complexity” (Laszlo & Laszlo, 1997, p.7). In other
words, size or the degree of complexity should not necessarily give an entity or a process more evolutionary advantages.

For example, the ammonia molecule is composed of a negatively charged nitrogen atom bonded to a triangle of three positively charged hydrogen atoms. Physical laws predict that if the atoms were to be locked in one position the molecule would have an opposite charge at each end—a dipole moment. However, the organizing dynamics of the ammonia molecule can manage the internal relations of the four atoms to neutralize its dipole moment by passing the nitrogen atom back and forth through the triangle of hydrogen atoms at a frequency of thirty billion times per second. However, such property is absent in the case of sugar and other large organic molecules, as they are too large and complex in structure to invert themselves (Wilson, 1978).

Under the resource-based systems approach, I propose the point of entry to answer the previous questions lie at the ultimate reality regarding the cause of perturbations in our global ecosystem or constraints on its way to self-organize and sustain throughout the history of the development of humanity. This reality, as Hardin observed, is that:

Population, as Malthus said, naturally tends to grow “geometrically,” or, as we would now say, exponentially. In a finite world this means that the per capita share of the world’s goods must steadily decrease” (Hardin, 1968, p.1243).

Someone may argue that, with the endowment of the energy emanated from the universe, the world resources on earth could theoretically be infinite. However, within the foreseeable future of our humankind, the per capita share of the usable world resources is only expected to go downward. In other words, the system of humanity is experiencing resource attenuation and energy dispersal. When the resources are depleted, the system will function like a closed system
with no resource supply from the environment. As we know from the second law of thermodynamic, the entropy/chaos of a closed system keeps increasing until complete disorganization.

In addition, the concept of per capita share is only a theoretical given, as the individual rights and accesses to world resources have never been equal due to both natural distribution and human intervention. The inequality forms gradient which will also cause entropy increase for the global ecosystem, as life moves around to search and/or compete for resources and also move resources around to minimize the constraints in the living of their life. These actions and activities consume resources and are therefore dissipative; internal entropy/chaos of human activity systems increases.

Here again, resource broadly refers to anything of value for the use of the global ecosystem and/or its constituent entities and processes to evolve and sustain. Applied in the world of humanity, it adds its social dimension rather than the material reality alone.

What is confounding the objective reality is that the mental image or representation human individuals and groups have of their environment and their relationship to it involves “not only the rational aspects of attitudes and behaviors, but also the values and belief components that shape human perception” (Laszlo & Krippner, 1998, p.26). The perceived constraints by humans in terms of resource attenuation and inequality discussed above are highly subject to their cognitive capacity and the value systems they hold on. Therefore, the impacts and influences of these perceptions on human behaviors vary. At a particular time and space, the most efficient path for a system to self-organize and to sustain calculated and chosen by the power of mind may not perfectly align with the evolutionary strategy prescribed by the principle of self-organization. Bounded rationality was then termed to designate rational choices of human
mind that take into consideration the cognitive and affective limitations (Simon, 1991). I have to admit that this is also inevitable in the discussion of my dissertation. This is why my goal here is to ask more questions and find future directions than to give ready answers.

Wherever there is competition, there is the need for rules or laws. There thus come rule-makers, authorities, dominance, power, self-interests and rights, all of which then lead to cultural divergence and manipulations with various manifestations in economic, political, ideological, technological and military activities and events. When managed inappropriately, these matters become destabilizing perturbations in our social ecosystem. Forming disjunctures or reinforcing inequality throughout the period of indeterminacy, perturbations accumulate and evolve until the next point of societal bifurcation (Appadurai, 1995; Held, 1995; Laszlo, 1991, 1993; Sassen, 2004; Wallerstein, 1991). Resolving these social problems once again entails global collective energy, which forms circular tensions within the global ecosystem where the interaction of its various layers of subsystems—globalization—intensifies. This process is much like the dynamics within the aforementioned ammonia molecule where the nitrogen atom circulates around the triangle of hydrogen atoms at a high frequency in order to maintain the molecule’s structural stability and sustain its functionality.

Talcott Parsons (1971) suggests that two types of necessities shape the dynamics and directions of the evolution of human activity systems: one is cultural, which is given through the subjective value-system of each evolving community; the other is environmental, which is reflected in objective realities. The cultural necessity has more shaping power than the environmental one. According to Herbert A. Simon (1991), as a result of bounded rationality, people make decisions by satisficing—choosing the one that make them happy enough instead of the optimal. The feeling of uncertainty toward future triggered by resource attenuation and the
perceived inequality in comparison to the reference are more dominant than the objective reality in driving human to move, search and compete for resources. These behaviors are the strategic responses to the dissatisfaction and displeasure in human feelings in living of life. Similarly, the principle of self-organization gives an alternative definition of learning: “the conversational construction of personally significant, relevant and viable meaning” (Harri-Augstein & Thomas, 1991, p. 6). This definition of learning not only applies to an individual’s living of his or her personal life, but also the living, working and/or playing of a group of people collectively, in other words, the building of communities or their identifications. Human know-how and feel-how are taken as an ever expanding resource for an individual, a group, or a community to gain coherence and evolve.

What implies here is that 1) in the world of humanity, life satisfaction might be a more important factor than material productivity to measure the efficiency or health of a system or to assess human achievement (Capra, 1989); and 2) systems-oriented inquiry is not necessarily based on quantitative modeling in execution where the focus could be on its qualitative heuristic function (Laszlo & Laszlo, 1997).

When human perception is in not sync with the evolutionary strategy prescribed by the self-organizing nature of a given system, cultural necessity drives human behaviors that perpetuate singular responses that no longer fit with the realities of a changed and changing environment (Laszlo & Krippner, 1998). It becomes the constraints to the self-organization and coherence of human mind as a system. In fact, perception itself “refers to the organization of sensory information into meaningful patterns” (Laszlo & Krippner, 1998, p. 24). Therefore, the resource-based systems approach I propose here aims at “a simultaneously critical and normative
exploration of the relationship between our perceptions and conceptions and the worlds they purport to represent” (Laszlo & Krippner, 1998, p.4).

When cultural necessity and environmental necessity are in sync, human actions and activities are compatible with the system’s organizing dynamics and evolutionary direction through the effective processing of environmental information and efficient exploration of various structural responses to future uncertainties and constraints (Laszlo & Krippner, 1998). The accumulation of working processes the exploratory efforts from each individual construct collectively as they transform their gradient—perceived inequality, becomes the "learning", "organization" or "design" of the system as a tangible artifact—the engineering of a system that is capable of presenting self-organized behavior. Scientific, technological and social innovations, as emergent properties, take shapes in the patterns of and transform the organizational structures of systems such as culture, nation, economy, institution, community or organization (Bejan & Lorente, 2006; Camazine, Deneubourg, Franks, Sneyd, Theraulaz, & Bonabeau, 2003; Henshaw, 2010; Sen, 1970). These innovations are resources of value created by humans contributing to the evolution and well-being of the global ecosystem and its subsystems with capabilities in addressing the constraints to the self-organization of human activity systems and increasing their efficiency (OECD, 2010).

Therefore, on the other side of human mind, there is human creativity in inventing, making, assessing, and implementing the designs through learning from the self-organizing dynamics of natural systems. This allows human beings to navigate through systemic complexities and societal changes as part of the general process of adapting human lifeways to the global ecosystem and taking humans out of conflict with natural processes (Laszlo & Laszlo, 1997; Marshall, 2002). Accordingly, when the originality and contribution of humanity are
concerned, concepts of social resources such as information, knowledge, intellectual property, innovation, technology, patent, idea, time, credit, trust, social capital, power, competitive advantage, happiness, satisfaction and human labor, etc. can all fall under the umbrella of resources according to the resource-based view. They are often relatively intangible in comparison to physical and material resources; however, they are also of value for the use of the global ecosystem and its constituent subsystems to gain stability and coherence in a sustainable way.

Globalization, in my opinion, is the emergent pattern of the resource organizing dynamics of the global ecosystem including human activity systems and their wider context of life support systems. For systems at the global level, global integration and its seemingly homogenizing effect are the strategic structural responses to the constraints and uncertainties caused by attenuation and inequality regarding world resources. These systems’ self-organizing nature--minimizing constraints/uncertainties and increasing efficiency/coherence of their organization--directs their operating evolutionary strategies: transnational collaboration for more efficient resource production, worldwide coordination for more equal resource redistribution, as well as international cooperation for more effective solutions to social, environmental and technological problems resulting from natural disasters and humans’ bounded rationality.

However, the globalizing patterns of the global ecosystem are the emergent properties on the level of whole ensemble, which might not necessarily characterize the organizing dynamics of its constituent subsystems. For systems whose boundaries are defined at the regional, national, institutional, industrial, organizational, ethnic, communal, familial and individual levels, they have different resource composition in terms of tangible/intangible or natural/social resources and interactions with their respective surroundings. To demonstrate their self-organizing nature
toward efficiency and coherence, they might carry out varied operating strategies in terms of structural changes on their paths to evolve. Their paths might be featured with uniqueness, heterogeneity, diversity, divergence or decrease in complexity. Then these idiosyncratic features or emergent properties, as they showcase the systems’ evolutionary capabilities that contribute to their self-organized behavior, become a type of resource. Depending on the role human agent plays in organizing each of these system, alternatively, how culture is codified (Parsons, 1991), their cultural necessities--the imperfect and irrational side of human mind--could be disparate or in inherent conflict with each other. Gordon Childe (1956) suggests that different cultures form different strategic responses to the different evolutionary needs that are specific to each system and thus represent different evolutionary paths to self-organize and sustain. With his comprehensive prehistory account and archeological evidence, Childe countered the idea of Aryan supremacy and superiority and explained his theory of divergence with modifications of convergence. Therefore, an indifferent approach to homogenizing or integrating divergent cultural necessities and goals may end up with more constraints to systems’ well-being and sustainability. I am not sure if cultural differences are the major source of conflicts (Huntington, 1993), but it could be the major constraint to the solutions of world conflicts.

As Appadurai (2004) has observed, globalization only brings about homogenization at the instrumental level but operationally the world is heterogeneous. However, these homogenizing effects (Giddens, 1999) do have an influence on our perception of the world by creating the postmodern illusion. They shift our attention from the signified to the signifier, from the message (social labour) to the medium (money), from function to fiction, from things to signs, and from ethics to aesthetics (Harvey, 1989). This explains a similar observation by Waters (1995) that globalized events often appear to be amorphous and beyond one’s control. Talcott
Parsons (1982) explained these illusions, amorphousness and fluidity (Taylor, 2005) as an escape from incoherence or uncertainty in the deeper microscopic structures of human activity systems and developed his theory of symbolism—the transformation driven by the self-organizing nature of human mind to navigate through cognitive complex (Freud, 1923). Comparing the constitutive level of society with Noam Chomsky's concept of "deep structure" (Chomsky, 1957), Parsons (1982) writes,

The deep structures do not as such articulate any sentences which could convey coherent meaning. The surface structures constitute the level at which this occurs. The connecting link between them is a set of rules of transformation, to use Chomsky's own phase (p.53).

Formation of institutions such as myths, religions, philosophies, art-systems, or semiotic consumer behavior then generally performs or actualizes the transformative processes and entities (Lidz, 1982; Robertson, 1991). This rationale serves as a theoretical foundation for the knowledge-based understanding of human societies (Leydesdorff, 2001). It is also a demonstration of the trans-disciplinary paradigm of the resource-based systems approach to holistically theorizing globalization and organization of human activity systems.

By this point, I have addressed several analytical subjects that are key to other globalization theories, such as economics, politics, ideology, culture, technology, innovation, power and dominance, etc. (Beck, 1992, 2000; Castells, 1996, 1997; Giddens, 1987, 1990; Gilpin, 1987; Huntington, 1993; Rosenau, 1990; Sassen, 2000, 2001, 2002, 2008; Wallerstein, 1984, 1991). I have also mapped their relations under the systems approach. The major difference between my theorization and others is that I do not see any of these subjects or other cross-border human events and activities as the fundamental causes or driving forces of globalization as the other theorists do. Instead, I interpret them as the products of the
evolutionary process of human activity systems with globalization as an emergent property for the whole ensemble. With the resource-based systems approach, I am in the hope to find “truths supposed to be above the flux of history—something more fixed and universal, permanent, and reliable as a guide to action than the particularities of history can of themselves disclose” (Lacey & Haakonssen, 1991, p. 7).

For the natural system of a living organism, the information that instructs it to self-organize is contained and inherited in DNA, which specifies the algorithm or set of steps in creating and maintaining a unique and complex structure and function where external energy can be effectively and efficiently applied to reduce its entropy and thus sustain its survival, like the design and mechanism of heat pumping or refrigeration devices. Bearing the evolutionary capability, this information, as it is processed by DNA, compensates for the uncertainty in the system’s organizing dynamics and reverses its tendency to disorganize inflicted by the second law of thermodynamics (Peterson, 2012).

To liken sociocultural evolution to biological evolution, Laszlo & Laszlo (1997) suggest that the symbolized information in culture functions like the genetic information in DNA. It guides the transformation of societal structures of human activity systems much the way DNA instructs the replication of biological structures and provides an operational context for actions and behaviors. However, the meta-structural logic in or the meta-systemic control by culture is not deterministic in the outcome of the evolution of human activity systems. Instead, it defines the orientational boundaries of the real pathfinder on its way toward the attractor—the ultimate goal of self-organization. This further backs up the point of my dissertation that the principle of self-organization runs through all evolutionary processes and entities in the global ecosystem including human activity systems and their wider context of life support systems.
The real pathfinder—the normative pattern of the organizing dynamics is embodied by the social system. Therefore, cultural systems are different from social systems. They have an independent power of transition, either as components of actual social systems or as cultural bases that may spread across social systems. As in the cases of ancient Greece and ancient Israel, the original social bases had died while the cultural systems survived in their respective modified derivatives of Greek philosophy and Christianity (Parson, 1966).

Therefore, culture is different from cultural events. It is a living system that transcends time and space (Nelson & Winter, 1982b). The reins of power may change hands; empires may dissolve into independent nation-states; ideologies may swing the pendulum back and forth between socialism and liberalism; innovations may replace technologies in use; financial centers may lose patrons to emerging ones; individual human beings at maximum may witness about a century of change. Comparing to those events, as Huntington (1993) has observed, within a given time and space, culture is a much more stable concept subject to less mutability. As the DNA of human activity systems, culture encodes the historical trajectories of their evolution, the same way as the information in human DNA lands us at the discovery in Africa of our humans’ common ancestors.

Representing the strategy component of the evolutionary capability of human activity systems, cultures reflect the degree of efficiency of the resource organizing dynamics of the systems, in other words, their well-beings and sustainability. For systems with high efficiency, the uniqueness in their cultures can also be taken as a type of intangible resource because of their competitive advantage in evolution.

In my dissertation, the cultural background where the case analysis is contextualized is the system of Chinese culture, which is more inclusive than the national society of China. As
discussed earlier, culture is a transcendental construct that is not subject to temporal or spatial constraints typical for the agglomeration of economic, political or national systems. For example, the evolution of the society of China has experienced various structural changes of national territories and dynasties with multiple unification of or disaggregation into discrete nation-states. But the system of Chinese culture has continuously maintained its function and identification along with the evolution of our global ecosystem since its origin. Among the several ancient civilizations known so far, “China has the longest continuous culture surviving from ancient times. Chinese culture had influence beyond its borders to the whole of East Asia, contributing to the shape of the cultures of Japan and Korea” (The University of Oxford China Center, 2010). Its noteworthy sustainability makes it a good research case to enhance our understanding on the evolutionary dynamics and strategies in our societal and natural environment.

Instead of focusing on the political and economic systems of China, Chinese culture, in lending its efficiency in organizing world resources beyond national borders, might shed light on the contemporary role of China on the world stages. It is essential through the concept of social network in making coherent the systems analysis of the research case in my dissertation. Following that, it is also instrumental in demonstrating how globalization--the emergent pattern of the resource organizing dynamics of the global ecosystem--transforms entities and processes vertically across the interacting transnational, national, institutional, industrial, organizational, ethnic, communal, familial and individual levels, evolving horizontally within the interlocked cultural, historic, social, economic, political, and technological dimensions.

1.3 Application of the Resource-Based Systems Approach to Organization of a Firm and Its Social Network
In this section, I will discuss the definitions of resource, knowledge, uniqueness, social network, identity, life and innovation at the systems levels centering around a firm under the resource-based systems approach. During the discussion, I will demonstrate how this approach grows upon and integrates various frameworks of firm theories (Burt, 1992; Grant, 1996; Nelson & Winter, 1982; Penrose, 1959; Spender, 1989; Wernerfelt, 1984). Emphasis will be put on how to apply and operationalize these definitions in the context of international SMEs and transnational entrepreneurship (Dev et al., 2002; Knight & Kim, 2009; Lin, 2001a; Lin, 2001b; Oviatt & McDougall, 2005; Peng, 2001; Penrose, 2009; Powell, 1992; Saxenian, 2006; and Zhou et al., 2007), which is featured in the research case that follows.

1.3.1 Resources

In general systems sciences, resource often means things that carry “energy” in the physical universe. In describing the general evolutionary systems theory, Laszlo (1991, 1993) measures the throughput of both “information and energy.” Under the resource-based view, however, resource has an integrated connotation of energy, mass, information or anything of value to the existence of the system. In talking about the resource-based systems approach to globalization and organization of human activity systems, resource broadly refers to anything of value for the use of the global ecosystem and/or its constituent entities and processes to evolve and sustain. The value-creation in human activities comprises social resources such as information, knowledge, intellectual property, innovation, technology, patent, idea, time, credit, trust, social capital, power, competitive advantage, happiness, satisfaction and human labor, etc. Though relatively intangible comparing to physical and material resources, they contribute to the
efficiency and coherence of the organizing dynamics of human activity systems in both the
individual and collective senses.

The constraining realities both objective and perceived regarding resources in the global
ecosystem, with their fundamental expository power that I suggest, are the foundation in my
theorizing of globalization and organization of human activity systems. But I am by no means
the first to start this observation. In fact, a wide range of scholars researching on globalization
have incorporated resource into their theses. However, they differ on their angles and degrees of
emphases on this matter. More importantly, most of them only look at resource in its natural
sense, paying little attention to its social connotation, which often has been termed under various
other rubrics. To name a few,

“…few will deny that given the problems of time, distance, and limited technologies for
the command of resources across vast spaces, cultural dealings between socially and
spatially separated groups have, until the past few centuries, been bridged at great cost
and sustained over time only with great effort” (Appadurai, 2000, p.100).

“Four imperatives make up the dynamic of McWorld: a market imperative, a resource
imperative, an information-technology imperative, and an ecological imperative” (Barber,
1992, p. 54).

“‘Globalization’ is first and foremost a ‘redistribution of privileges and deprivations, of
wealth and poverty, of resources and impotence, of power and powerlessness, of
freedom and constraint’.” (Bauman, 1998, see Beck, 2000, p.55)

“In what ways does ecological destruction favour war—whether in the form of armed
conflict over resources necessary to survival (water, for instance), or in the calls of
ecological fundamentalists in the West for military intervention to halt such processes as
the loss of tropical rainforest?” (Beck, 2000, p.41)
“Revolutions in technology rendered possible by the division of labour and the rise of the materialist sciences had the effect of demystifying the processes of production…and opening up the capacity to liberate society from scarcity and the more oppressive aspects of nature-imposed necessity” (Harvey, 1989, p.110).

“Cameron McCarty…calls our attention to the underside of globalization—a deepening pattern of xenophobia, ethnic absolutism, and fundamentalism—that is articulated to key flash points of twenty-first-century life in which competition for scarce resources and access to and control over images dominate the field of conflict between human groups” (McCarthy, et al., 2007, p. XXXII).

“Likewise the emergence of this system of states was dependent upon the increase in capitalist activity (mercantile and industrial) during the period, and on the resources which were thereby provided to allow for the development of new administrative mechanisms and forms of political control” (Wallerstein 1991, p.144).

“The progressive constitutionalization of absolutist states became the instrument by which this capitalist class achieved its own technical and economic goals, not least by using the state to establish external colonies and thus to affect international competition by seeking to control global flows of resources” (Waters, 1995, p.98).

When we zoom in our observation to that of a firm, in her theory of the growth of the firm, Edith Penrose (1959) sees the firm as “a pool of resources the utilization of which is organized in an administrative framework” (p. 132). This pool of resources contains physical resources and human resources. The former consists of “tangible things—plant, equipment, land and natural resources, raw materials, semi-finished goods, waste products and by-products, and even unsold stocks of finished goods;” while the latter refers to “unskilled and skilled labour, clerical, administrative, financial, legal, technical, and managerial staff” (Penrose 1959, p. 21, 22).
This resource-based view (RBV) was extended by Birger Wernerfelt. Drawing on Richard Caves’ insights on corporate strategy and organizational structure (Caves, 1980), Wernerfelt defines a firm’s resources as tangible and intangible assets that give shape to a firm’s strengths and weaknesses (Wernerfelt, 1984). In addition to the tangible assets that have been mostly covered by Penrose’s definition of resources, a firm has a wide range of intangible assets, such as strategies on internal allocation of resources and productive services, decision rules, efficient procedures for operation, appraisal and reward mechanisms, brand names, in-house knowledge of technology, employment of skilled personnel, and trade contacts (Caves, 1980; Wernerfelt, 1984).

With regards to the case of international SMEs in particular, Gary Knight and Daekwan Kim identify four dimensions of international business competence (IBC) as intangible firm resources that are essential to the success of international SMEs (Knight & Kim, 2009). These four dimensions are international orientation, international marketing skills, international innovativeness, and international market orientation.

According to RBV, the optimal growth of a resource-endowed unit hinges on the balance between the consumption of existing resources and development of new ones (Penrose, 2009; Rubin, 1973; Wernerfelt, 1984). The definition of a resource-endowed unit is well beyond an organization. It may refer to a nation, a society, an industry, a community, a family or an individual, thus echoing the resource-based systems approach to organization that I propose.

1.3.2 Knowledge

As an outgrowth of RBV, the knowledge-based view of the firm (Spender, 1989) defines “the organization as, in essence, a body of knowledge about the organization's circumstances,
resources, causal mechanisms, objectives, attitudes, policies, and so forth” (p.185). As a firm’s “most strategically important” and “primary productive” resource (Grant, 1996) (p. 110, 119), knowledge includes explicit knowledge and tacit knowledge. Grant (1996) suggests that, “I identify knowing how with tacit knowledge, and knowing about facts and theories with explicit knowledge. The critical distinction between the two lies in transferability and the mechanisms for transfer across individuals, across space, and across time. Explicit knowledge is revealed by its communication. This ease of communication is its fundamental property. Indeed information has traditionally been viewed by economists as being a public good—once created it can be consumed by additional users at close to zero marginal cost. Tacit knowledge is revealed through its application. If tacit knowledge cannot be codified and can only be observed through its application and acquired through practice, its transfer between people is slow, costly, and uncertain” (p. 111).

A corresponding explanation from the resource-based systems approach will be that the tacit knowledge represents the deep structures of the firm where meanings cannot be conveyed coherently, whereas meanings in explicit knowledge as the surface structure can (Chomsky, 1957; Parsons, 1982).

Harold Demsetz holds that, the firm exists as a response to the fundamental asymmetry in the economics of knowledge (Demsetz, 1991). In the attempt to develop a knowledge-based theory of the firm, Grant sees the firm as a knowledge-integrating institution (Grant, 1996). The primary task of management is to coordinate, in producing goods and services, the integration of idiosyncratic specialist knowledge, especially tacit knowledge, possessed by individuals, where the market fails due to “the immobility of tacit knowledge” and “the risk of expropriation of explicit knowledge” (Grant, 1996, p. 112). Under the resource-based systems approach, in other words, the firm exists to innovatively transform the gradient between its organization and the environment (the market) caused by inequality regarding access to resources, especially tacit
knowledge. The transforming efficiency hinges on minimizing the cost of resources such as time and capitals associated with knowledge transfer, which would otherwise become the constraints to the firm’s well-being and sustainability. It also confines the scope and the scale of the production of the firm as opposed to the role of market. In talking about various coordination mechanisms for knowledge integration, Grant claims that (Grant, 1996, p. 115), “the main contribution of the knowledge-based view to this discussion is recognition of the high costs of consensus decision making given the difficulties of communicating tacit knowledge. Hence, efficiency in organizations tends to be associated with maximizing the use of rules, routines and other integration mechanisms that economize on communication and knowledge transfer, and reserve problem solving and decision making by teams to unusual, complex, and important tasks.”

As we may see, the normative elements institutionalized in a firm’s operation serve to transform the uncertainty in the microscopic structure of the firm whose meaning is not coherent enough to communicate. This reflects the self-organizing nature of the evolutionary system of the firm to gain efficiency of its organizing dynamics, according to the resource-based systems approach to organization.

Moreover, knowledge integration necessitates the existence of common knowledge, namely, *language, other forms of symbolic communication, commonality of specialized knowledge, shared meaning, and recognition of individual knowledge domains* (Grant, 1996).

The self-organizing nature of human mind to navigate through cognitive complex via learning has been a theoretical foundation for the knowledge-based understanding of human societies (Leydesdorff, 2001). Grant’s approach to the role of the firm focuses on the knowledge application and the role of individuals rather than the creation and acquisition of organizational knowledge. The latter has been featured in the research of organizational learning (Huber, 1991;
Levitt & March, 1988) and the knowledge-based view of the firm (Nonaka, 1991; Nonaka, 1994; Spender, 1989). Grant’s view is consistent with Simon’s observation that “all learning takes place inside individual human heads; an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organization didn't previously have” (Simon, 1991, p. 125). Also, the principle of bounded theory follows that the capacity of human brain to acquire, store and process information is limited (Simon, 1991). Therefore, the production of knowledge requires individual specialization in order to achieve efficiency (Grant, 1996). Grant’s approach is also compatible with the self-organized learning where the “construction of personally significant, relevant and viable meaning” matters (Harri-Augstein & Thomas, 1991, p. 6).

Moreover, while the organization theory is preoccupied with cooperation in reconciling divergent goals of individual members (Alchian & Demsetz, 1972; Jensen & Meckling, 1976; Lawrence & Lorsch, 1967; Leibenstein, 1966; March & Simon, 1958; Selznick, 1948; Williamson, 1975), Grant’s knowledge-based approach emphasizes coordination as essential to the efficiency in integrating individual specialized knowledge. This has been explained in our earlier discussion of cultural necessity that there lie no standards to normalize human perception-based value systems which are shaped by system-specific (individual-specific when system is defined at the individual level) factors such as its boundary definition, resource composition and interaction dynamics with environment. Cultural necessities are the major constraint to the solutions to conflicts between systems. An indifferent approach to homogenizing or integrating divergent cultural necessities may end up with more constraints that jeopardize efficiency. However, efficiency might be maintained through coordination—a type of modified convergence (Childe, 1956).
As a result, the analysis of hierarchy can take on a different approach. Cooperation highlights hierarchies of authority. Hierarchy, as an organizing dynamics, also has its evolutionary capability as a strategic response in avoiding the inefficiency in coordinating a complex system with various specialized units (Simon, 1981), and in the context of the firm, integrating the specialist knowledge possessed by individuals. For example, through rules and directives, the tacit knowledge of a quality engineer can be converted into explicit knowledge when he establishes the standard operating procedures for quality control process. The efficiency is achieved not only through transforming the immobility of tacit knowledge, but also by saving the communication cost were the engineer to teach each one of his subordinates what he knows (Grant, 1996). These are the self-organized behaviors of a firm to reduce incoherence and minimize constraints.

In situations where dealing with cross-functional coordination of tacit knowledge and decision making is inevitable, fluid membership in team-based structure with direct participation of specialists in multiple teams emerges as an alternative organizational design to hierarchy. According to the knowledge-based theory, the mobility of specialists compensates for the immobility of tacit knowledge in that situation (Grant, 1996). This might have provided the operating context for transnational entrepreneurship.

When the output of a firm’s production is concerned, Grant (1996) holds that, “Efficient knowledge utilization requires congruence between the knowledge domain of the firm and its product domain… An input-output matrix of knowledge inputs and product outputs for the economy would display broad product knowledge clusters which correspond to industries within which smaller clusters correspond to individual firms” (p. 120). This rationale demonstrates a strong systems approach to the relationships between firms and industries (the firms’
environment), so it provides a context to connect the analysis at both levels. When explained by the resource-based systems approach, when the congruence between the knowledge domain of the firm and its product domain increases, the perception of the firm on opportunities in the market is more in sync with the actual demands, while the knowledge utilization--information processing and exploration of structural responses to those opportunities as embodied in product domain--become more efficient. Idiosyncratic cultural necessity that shapes each firm’s perception meets different needs and corresponds to different opportunities in the market, so both industries and firms diversify (Childe, 1956).

1.3.3 Uniqueness: Sustainable Competitive Advantage

Explicit knowledge can often be transferred across locations and aggregated at a single place efficiently through common language such as statistics (Grant, 1996). However tacit knowledge such as a manager’s capability or the quirks of individual machine tools is idiosyncratic and cannot be aggregated at a single location. In other words, they are “idiosyncratic knowledge” (Grant, 1996, p.111) and “knowledge of the particular circumstances of time and place” (Hayek, 1945, p. 521).

Collectively, organizational knowledge acquired from multiple individual sources is also idiosyncratic (Nonaka, 1994; Teece, 1987), so is the knowledge-intensive integration mechanism of those sources. Over time, those knowledge are reinforced and embedded into organizational memory through routinization (Autio, Sapienza, & Almeida, 2000), shaping a unique configuration of firm resources in forms of capabilities and competences that are specific to the firm (Dev, Erramilli, & Agarwal, 2002; Dierickx & Cool, 1989; Nelson & Winter, 1982b; Nonaka, 1994; Wu, Sinkovics, Cavusgil, & Roath, 2007).
A firm’s central advantage in production not only lies in the “avoidance of transaction costs associated with market exchange” (Grant, 1996, p. 113), but also comes from “unique advantages for governing certain types of economic activities from a logic that is very different from that of a market” (Ghoshal & Moran, p. 13). Grant (1996) believes that, achieving efficiency in coordinating and integrating different individual idiosyncratic knowledge, especially tacit knowledge, is such a logic. As we can see, this logic is the same as the principles of organization—a natural system’s evolutionary capabilities to self-organize in terms of reducing its internal entropy or increasing the efficiency in organizing resources. Since the resource composition is idiosyncratic, the path for them to self-organize and the pattern of the system’s organizing dynamics become unique. Because tacit knowledge cannot be conveyed coherently, the pattern of its organizing dynamics is hard to comprehend and imitate. Emphasizing the importance of tacit knowledge for competitive advantage (Grant, 1996; McEvily & Chakravarthy, 2002), Grant (1996) further holds that “longevity of competitive advantage depends upon the inimitability of the capabilities which underlie that advantage” (p. 117). Therefore, the uniqueness in the pattern of a firm’s organizing dynamics along with the emergent evolutionary capabilities and competences, as a type of resource, strategically becomes the firm’s sustainable competitive advantage.

Similar to the idiosyncrasies in knowledge integration mechanisms, Penrose suggests that a firm creates values by providing services which are a function of the way resources are organized and used (Penrose, 2009). She says that, “exactly the same resource when used for different purposes or in different ways and in combination with different types or amounts of other resources provides a different service or set of services” (p. 22). These heterogeneities embedded in the resource organizing dynamics also become the “source of the uniqueness” of
the individual firm (Barney, 1991; R. S. Burt, 1992; Dev et al., 2002; Johnson, Lenartowicz, & Apud, 2006; Kogut & Zander, 1993; Nelson & Winter, 1982b). As Robert Grant (1996) summarizes, “The resource-based view perceives the firm as a unique bundle of idiosyncratic resources and capabilities where the primary task of management is to maximize value through the optimal deployment of existing resources and capabilities, while developing the firm's resource base for the future” (p. 110), in other words, to increase the efficiency of the firm’s resource organizing dynamics to evolve and sustain, reflecting the self-organizing nature of the firm.

Compared to the resource-based view of the firm, the knowledge-based theory of the firm emphasizes the role of individuals. For SMEs, the entrepreneurial and managerial competence of the entrepreneurs in many ways decides the organizational competence and capabilities (Penrose, 2009). Entrepreneurs at the international SMEs, have to coordinate knowledge integration through internationalization process, which involves ongoing social and market learning and adaptation (Dev et al., 2002; Zahra, 2005). However the learning experiences and coordination efforts of individual entrepreneurs are highly subjective and idiosyncratic. Their cultural necessities are different, which become another dimension of the heterogeneity or uniqueness of the transnational entrepreneurship (Dev et al., 2002; Knight & Kim, 2009; Peng, 2001; Powell, 1992) as its sustainable competitive advantage.

To stress the key role of entrepreneurs, Edith Penrose (2009) argues that, “the environment has been treated not as an objective ‘fact’ but rather as an ‘image’ in the entrepreneur’s mind; the justification for this procedure is the assumption that it is not the environment ‘as such’, but rather the environment as the entrepreneur sees it, that is relevant for his actions” (p. 189). She asks, “Assuming that ‘real’ opportunities for profitable investment are
to be found in the economy, what determines who will see them, who will be able to take advantage of them, and to what extent?” (p. 190). Penrose’s questions suggest that, “the temperament or personal qualities of individuals” (p. 30) condition individual entrepreneurs and managers’ perceptions of opportunities in the environment. Individual perceptions affect the firm’s ability to capture and act upon the opportunities and mediate the efficiency in cultivating and utilizing resources from outside the firm, such as those potentially provided by new hires (Penrose, 2009). Consistent with the resource-based systems approach, whether the cultural necessity of the individual is in sync with the environmental necessity of the objective reality for them to self-organize—the real opportunities (Penrose, 2009), mediates the effectiveness in processing environmental information and the efficiency in exploring structural responses to future possibilities and opportunities (Laszlo & Krippner, 1998).

In addition to the psychological subjectivity of transnational entrepreneurship, its idiosyncrasies are also shaped by the historical conditions, causal relationships, social complexity and specific circumstances uniquely associated with each individual’s life (Barney, 1991; Demsetz, 1973; Mahoney, 1995; Powell, 1992). As a type of tacit knowledge or intangible resources giving shape to the cultural necessity of living one’s life, they can hardly be understood or replicated by competitors. When the life of these individuals are collectively analyzed as a system of certain culture with common historical trajectories, there lies an opportunity for us to see how culture travels across time and space and presents its self-organized behaviors in transnational entrepreneurship.

Overall, the exploration and interpretation of the uniqueness residing in the organizing dynamics of the contemporary international SMEs and transnational entrepreneurship under the framework of RBV (Penrose, 2009) and the knowledge-based theory of the firm, echoes Cynthia
Stohl’s view on the study of globalization (Stohl, 2001). She suggests that, “The dynamic structuring of globalization is a culturally saturated process that can be better understood by focusing not only on the constraints and demands of the global environment but also on the meanings, interpretations, and sense-making activities that constitute multinational organizing” (p. 326). This is exactly what the resource-based systems approach to theorizing globalization and organization has been advocating.

1.3.4 Social Network

Both the resource-based view and the knowledge-based theory of the firm stress the uniqueness of the mechanism how a firm organizes its resources and knowledge from both inside and outside. Uniqueness, as a type of resource contributing to the firm’s self-organized behavior, demonstrates advantages in increasing efficiency of the firm in organizing resources, whose relationships competitors lack the coherence to comprehend and imitate (Grant, 1996; Penrose, 2009; Zahra, Ireland, & Hitt, 2000). Burt (1992) confirms that, “competition is not about being a player with certain physical attributes; it is about securing productive relationships” (p. 190) in resource segments such as nations (Carroll, 1981), occupational groups (Hannan & Freeman, 1984), categories of demographic or professional attributes (McPherson, 1983; McPherson & Smith-Lovin, 1988), or kinds of corporate strategies (Brittain & Wholey, 1988). An efficient network-based mechanism by coordinating key resource stakeholders, can mediate the liabilities of newness and smallness in the process of internalization, and has been identified as a competitive advantage vital to the success of international SMEs (Lin, 2001a; Lin, 2001b; Oviatt & McDougall, 2005; Saxenian, 2006; Zhou et al., 2007).
Social network, broadly defined as a web of connections and relationships for the sake of ensuring favors in personal and/or organizational action, can provide unique information and value for one’s self-organized behavior through increasing the efficiency of opportunity identification, resource mobilization and market learning (R. S. Burt, 1992; P. D. Ellis, 2007; P. Ellis, 2000; Granovetter, 1985; Harris & Wheeler, 2005; Zahra, 2005). In the world of human activity systems whose self-organization are constrained by the feeling of uncertainty toward future triggered by resource attenuation and the perceived inequality as demonstrated in human bounded rationality and imperfect competition (Simon, 1991). Those favors, also known as trust or interpersonal debt, are critical to freedom/autonomy and negotiated control of the entities in the social structure (Burt, 1992), alternatively, the degree of self-organization through increasing the efficiency in organizing resources.

Burt holds that (1992), the holes in the connections of the social structure bear “entrepreneurial opportunities for information access, timing, referrals, and control” (p. 2), because of their spatial advantages in exploring the structural responses to those opportunities. For example, social networks of international entrepreneurs and managers can help “save information search costs (knowledge of foreign market opportunities), lower risks and uncertainties in foreign markets (advice and experiential learning), reduce transaction costs (referral trust and solidarity)” (Zhou et al, p. 679) and therefore enhance business performances (Peng & Luo, 2000; Zhou et al., 2007).

Building upon the interface model of markets (Harrison C. White, 1981; Leifer, 1985) and population ecology analysis (Hannan & Freeman, 1989), the structural hole argument addresses the issues of diversity and sustainability of firms within a market as a network-based ecosystem: “The network image of a market is the population ecology image of a niche” (R. S.
Burt, 1992, p.3)—“a pattern of variably constrained relationships providing the resources that sustain the population’s members” (Burt, 1992, p. 210). Those constrained relationships also define the resource organizing dynamics of the market interacting with the environment as well as the constraints its constituent firms have to interact with in finding the path toward self-organization. “Structural autonomy is analogous to niche width. The greater the structural autonomy of a market, the wider the niche, and the more likely that diverse organization forms can survive in the market niche. Illustrative data show that firms survive longer as leaders in more autonomous markets, and structural autonomy decreases the mortality of organizations new to a market” (R. S. Burt, 1992, p. 3).

Structurally autonomous players are “those with relationships free of structural holes at their own end and rich in structural holes at the other end” (R. S. Burt, 1992, p. 45). They present self-organized behaviors. For a structurally autonomous system, its own structure is coherent and its resource organizing dynamic is efficient. It is rich in structural holes at the other end that define the boundary of its identification, so its niche as embedded in its environment is wide and the extent to which it is subjective to the influence from the environment is low. The internal entropy of a structurally autonomous system is low, so it has a lot of leeway to receive entropy from its subsystems before it reaches its limit of stability. This allows the survival of its subsystems with a wide range of internal entropy and with diverse patterns of their resource organizing dynamics. As a result, diversity in the organization forms and sustainability of those organizations within a system increase along with its structural autonomy.

In interpreting the formation of “social and emotional organization as a kind of residue that accumulates in the wake of entrepreneurial players navigating around the constrained relations that define a market” (R. S. Burt, 1992, p.3), structural holes are hypothesized as a
strategy. This is consistent with the resource-based systems approach, where an evolutionary system with its self-organizing nature, explores strategic structural responses to environmental constraints through learning and adapting where knowledge accumulates. Therefore, entrepreneurial behavior is a reflection of the evolutionary necessity of self-organization.

Integrating the neoclassical theory of the firm (Coase, 1937), resource dependence theory (Pfeffer & Salancik, 1978) and transaction cost economics (Williamson, 1975; Williamson, 1987), this strategy operates as a theory of the firm, where “players develop ways to manage their low control in constraint relations and protect their control advantage in opportunity relations” (Burt, 1992, p.3). This hypothesis on structural holes as a strategy has direct implication for the nature of the international SMEs and transnational entrepreneurship in terms of overcoming resource limitation (Saxenian, 2006) caused by the liabilities of newness and smallness. For the matter of entrepreneurship, Burt (1992) further proposes, “when the constrained player is a person, the strategy hypothesis is a description of personality as the emotional residue of a person who is trying to manage the loss of control in constrained relationships” (p. 3), illustrated by Sullivan’s interpersonal theory of psychiatry (Sullivan, 1940), Freudian identification as a defense mechanism (A. Freud, 1936; S. Freud, 1923), and Bott’s images of segregated conjugal roles (Bott, 1957). Explained by the resource-based systems approach, personality could be the emergent pattern of an individual’s value system based on cultural necessity whose structure serves as a strategic response to the incoherence in understanding its relationship with the environment (Lidz, 1982; Parsons, 1982; Robertson, 1991).

Within the bounded population of a business network, the totality of persons connected by various social relationships can go as far as business professionals, government officials,
friends and relatives, etc. (Björkman & Kock, 1995; R. S. Burt, 1992). Business or industrial organizations rhetorically and instrumentally enact the cultural role of economic institutions (Andrews, 1992; Sanger, 1993). Victor (1992) identifies nine types of cultural/institutional patterns influencing the process of organizing across societies: kinship and family structure, educational systems and ties, class systems and economic stratification, gender roles, religion, occupational institutions, political and judicial systems, mobility and geographic attachment, and recreational institution. For example, institutional affiliations, such as where one attended college, could play a more critical role in the acquisition of knowledge, resources, and network linkages associated with power and control in some cultures than others (Wysocki, 1988; Zeldin, 1984). Another example is religious and theological influences, which can be seen in anticipatory socialization practices, attitudes toward work, organizational rituals, and the role of women in organizations (Boulding, 1990).

As for a firm, the relations within and beyond the firm are defined as social capital—a form of social resource as I have defined earlier. And it connotes both the resources the contacts hold and the structure of contacts in a network, where structural holes are formed (Burt, 1992, p. 9 & 12). And the uniqueness and efficiency demonstrated in information benefits of social network exist regardless of the strength of the relationships as long as it bridges a structural hole (Burt, 1992; Burt, 1997). Therefore, they assume the speed and flexibility in their responses to the global market as an enhanced capability of international SMEs (Oviatt & McDougall, 2005). Burt concludes that, social capital decides the efficiency in market production in terms of rate of return, and therefore is “the final arbiter of competitive success” (R. S. Burt, 1992, p.9).

Moreover, because of its social embeddedness, social network can function as an effective decoding solution for tacit knowledge to reduce causal ambiguity and cognitive
incoherence brought by social, cultural and historic complexity, and thus facilitate learning and adaptation (Burt, 1997; Liesch et al., 2002). In this regard, social network can monitor information benefits that cannot be otherwise monitored by bureaucratic means (Standifird & Marshall, 2000).

In the global manufacturing chains, social network is found to be an efficient and elegant response to the otherwise highly diffracted system comprised of the original equipment manufacturer (OEM) suppliers in developing countries and the foreign buyers from the developed countries (Donckels & Lambrecht, 1995; P. Ellis, 2000; Etemad, Wright, & Dana, 2001). This is especially the case for the success of the OEM supplier SMEs in China (Saxenian, 2006; Zhou et al., 2007). This is an example how social network is applied in systems analysis. As broad as the categories of entities in the social structure, from a person, an organization, to an industry, a nation and a society, the ripple effect of social network bridges a wide range of analysis from the macro level to the meso and micro ones (Burt, 1992, p. 192). This is also the essence of systems analysis. In my research, the concept of social network is also key to the research goal of demonstrating how globalization transforms entities and processes vertically across the interacting transnational, national, institutional, industrial, organizational, ethnic, communal, familial and individual levels, evolving horizontally within the interlocked cultural, historic, social, economic, political, and technological dimensions.

1.3.5 Identity & Life

Boundary identification is key to systems sciences as well as to the resource-based systems approach I propose (Laszlo & Krippner, 1998). To date, major orientations of theories and research on diverse identities include social identity theory, embedded intergroup theory,
organizational demography, racioethnicity and gender research, ethnology, as well as profession studies (Lammers, Garcia, & Kim, 2008; Nkomo & Cox, 1996).

As one of the most prominent intergroup theories about group identities effects on human behavior, social identity theory holds that people tend to classify themselves and others into social categories, and this classifications have a significant effect on human interactions (Tajfel, 1972; Turner, 1975; Tajfel and Turner, 1979). Social identity theory also implies that, a certain social identity has different valence in people’s self-representation for different social groups (Jackson, 1981). Identity is socially constructed (Ridgeway, 1991; Wharton, 1992), even for categories such as race and gender, because they are evoked by contextual stimuli rather than fixed components, as supported by the work on situational ethnicity and emergent ethnicity (e.g. Yancey et al., 1976; Okamura, 1981; McGuire et al., 1978; Stayman and Deshpande, 1989). Contextual forces such as the type of task to be performed and the demographic make-up of work group, determine identity salience. Ashforth and Mael (1989) summarize three general consequences of group identification: 1) individuals tend to choose activities and institutions which are congruent with their salient identities; 2) identification affects outcomes such as intragroup cohesion and cooperation; 3) identification reinforces attachment to the group and its values and increases competition with out-groups.

Embedded intergroup theory, developed by Alderfer and Smith (1982), has two key concepts: identity groups and organization groups. The former describes a group whose members share common biological characteristic, experience equivalent history, are subjected to similar social forces, and hold consonant world views (Alderfer, 1987). The common identity groups are based on gender, family, ethnicity, and age (Alderfer and Smith, 1982). In organization group, people share common organization positions, participate in equivalent work activities, and end
up with consonant world views. People’s identity in organizations is a function of their identity group membership and organization group membership. This theory recognizes that individuals don’t leave their racial, gender, or ethnic identities at the door when they enter an organization.

Organizational demography examines “the causes and consequences of the composition or distribution of specific demographic attributes of employees in an organization” (Tsui et al., 1995, p.4). Researchers of this approach focus on group identities of age, tenure, education and functional background. Research findings include that, demographic heterogeneity reduces intragroup cohesion, lowers member satisfaction and increases turnover (Jackson et al., 1991; Tsui et al., 1992; Wharton and Baron, 1987). However, this effect can be mediated by conscious attention to the dynamics of diversity, so that creativity, innovation, and quality of decision-making could also happen (Jackson and associates, 1992; Ancona & Caldwell, 1992; Bantel & Jackson, 1989).

After the passage of equal employment opportunity and anti-discrimination legislation in the late 1960s and early 1970s in the United States, large-scale research on race and gender began (Cox & Nkomo, 1990; Nkomo, 1992; Sivanandan, 1985). Those literatures mainly revolve around the identity categories of sex, race, national origin, religion, and age. One strand of the research focuses on disclosing evidence of race and gender discrimination, including tokenism, differential access to mentoring, exclusion from informal networks, glass ceilings, and other forms of restricted career mobility (Antal & Izraeli, 1993; Bell, 1990; Collins, 1989; Cox & Nkomo, 1991; Fernandez, 1981; Greenhaus et al., 1990; Ibarra, 1993; Iles et al., 1991; Morrison et al., 1987; Pettigrew & Martin, 1987; Thomas, 1990; Cahoon & Rowney, 1991; Freedman & Phillips, 1988; Stroh et al., 1992; Raggins & Cotton, 1991). Another strand of research focuses on race and gender issues on those traditional organizational behavior topics, such as job
satisfaction and job attitudes (e.g., O’Reilly and Roberts, 1973; Weaver, 1978), leadership styles (e.g., Bartol et al., 1978) and motivation (e.g., Brenner & Tomkiewcz, 1982; McClelland, 1974).

Ethnology studies concentrate on the group identity of nationality (Hofstede, 1980, 1984; Hall, 1976, 1982; Laurent, 1983; and Tung, 1988a, 1988b). Research findings suggest that cultural differences can become barriers to communication and understanding, leading to ineffective relationships. Another ethnology area is acculturation. In addition to national-cultural affiliation, founder’s values (Ashcraft & Pacanowsky, 1995), type of industry (Maurice, Sorge, & Malcolm, 1981), and occupational communities (Van Maanen & Barley, 1984) also contribute to the particular culture and identity of an organization and its members. “Influence attempts, compliance gaining, feedback, performance appraisals, and decision making take on greater complexity when individuals are trying to manage multiple and often conflicting identities in the global workplace” (Stohl, 2001, p.366.) For an individual, it means establishing a cultural identity that responds to the differences between norm and value systems of the different cultural groups of which she/he is a part (Cox, 1993; Hazuda et al., 1988; Wong-Reiger & Quintana, 1987). In general, ethnology research shows that “mixing people of different group identities in one social system may lead to a variety of dysfunctional outcomes unless steps are taken to overcome this problem” (Nkomo & Cox, 1996, p.344).

Integrating the various theories on identities discussed above, the resource-based systems approach suggests that the identification of an individual or an organization is relative to the observer’s perception on the relationships between the evolutionary system the individual or the organization embodies and its environment. Facing uncertainties in the complex social environment, human mind is driven to gain control of certain kind by its self-organizing nature as an evolutionary system to survive. As individuals navigate through the structural constraints in
the social environment in finding our paths to self-organize, we establish relationships with each or certain combinations of those constraints that contextualize different social groups or institutions (Burt, 1992; Lidz, 1982; Robertson, 1991). Various identities emerge as the patterns of each of those relationships or interacting dynamics established. Identities emerging out of the organizational context are diverse, such as those based on gender, age, race, ethnicity, education, experience, and occupation, etc. To stay coherent and organized while dealing with various constrained relationships with the environment, there is a constant negotiation between the idiosyncratic cultural necessity of one’s value system and the normative necessities from the environment. As a compromise between our self-organizing nature toward the optimal outcome and our cognitive and affective limitations, the mechanism of satisficing takes effect when we respond to the conflicts during negotiation (Simon, 1999). Satisfaction arises when we are represented by identities that align with our value systems and give coherence to the meaning of life lived. We then choose to reinforce the relationships represented by those identities through performing the normative imperatives required by those social groups or institutions. Consequently those identities assume salience in our general self-representation in the social environment.

The multiplicity of identity strikingly expands in the 20th century (Weigert, Teitge, and Teitge, 1986), “through all the change and complexity, modern individuals struggle to control their lives by organizing the mix of personal identities into a meaningful arrangement of biographical importance and situational flexibility within an increasingly rational and abstract social context” (p.57). Identity-building is a highly contextualized process in terms both time and space. Globalization adds to its complexity. Giddens (1991) argues,

“One of the distinctive features of modernity is an increasing interconnection between the two extremes of extensionality and intentionality: globalizing influences on the one hand
and personal dispositions on the other…The more tradition loses its hold, and the more
daily life is reconstituted in terms of the dialectical interplay of the local and the global,
the more individuals are forced to negotiate lifestyles choices among a diversity of
options” (p.53, 35, 32).

“Identity crisis,” the search for or dearth of meanings, grows out from the confusion in
face of too many fluid choices (Taylor, 2005). This view corresponds to Richard Sennett’s
analysis of the two generations of a diasporic Italian immigrant family in the American society
(Sennett, 1998). For the younger generation, he observed: “Prosperous as they are, the very acme
of an adaptable, mutually supportive couple, both husband and wife often fear they are on the
edge of losing control of their lives…He found himself plunged into the sheer flux of networking;
every call had to be answered, the slightest acquaintance pursued” (p. 19). Sennett suggests, in a
society composed of episodes and fragments under new capitalism, it is hard for a human being
to develop a narrative of identity and life history, which however, is essential to sustain one’s
character.

In talking about the issue of control, however, Ronald Burt thinks that relations and
networks are essential to our social life, as a source of strategic capability or a form of mentality
to manage the sense of losing control while navigating through social complexities and making
sense out of them (Burt, 1992). As aforementioned, one’s personality develops as an emotional
residue of this process. Explaining entrepreneurship in its sociocultural sense, Burt (1992)
suggests that,

“As the volume of structural holes in a player’s network increases—regardless of the
process that created them—the entrepreneurial behavior of making and negotiating
relations between others becomes a way of life. This is a network analogue to the cultural
explanation of motive. If all you know is entrepreneurial relationships, the motivation
question is a nonissue. Being willing and able to act entrepreneurially is how you understand social life…I will treat motivation and opportunity as one and the same. For reasons of a clear path to success, or the tastes of the players as the network’s author, or the nature of the player’s environment as author of the network, a network rich in entrepreneurial opportunity surrounds a player motivated to be entrepreneurial. At the other extreme, a player innocent of entrepreneurial motive lives in a network devoid of entrepreneurial opportunity” (p. 36).

Regarding the relationship between the spirit of entrepreneurship and social constraints, Burt furthers (1992),

“A social frontier is any place where two social worlds meet, where people of one kind meet people of another kind. Individuals who live on a social frontier are more likely to live by their entrepreneurial wits than are individuals in socially homogeneous environments…Relations that cross the frontier involve continual negotiation between the expectations of the manager and the expectations in the world across the frontier. Away from the frontier, where people are more homogeneous, contradictory expectations of relations are less frequent. Less entrepreneurial skill is required to survive” (p.163).

With regard to the identity crisis mentioned above, Burt’s arguments might have implied why, in the discourse to sort through the multiplicity of identity (Weigert, et al., 1986) brought by globalization, some people stumble and suffer, while others survive and thrive.

The resource-based approach to organization of human activity systems suggests that life is about navigation through complexities and uncertainties in our environment that constrain our well-being and happiness. It is about learning not only the environment but also our relationships with the environment, and negotiating to the best of our knowledge for the coherence and sense of control that are essential to our well-being and sustainability while exploring structural responses and adapting to the constraints in the environment. It sees the spirit of
entrepreneurship as the willingness to learn and to change. It reflects the efficiency of the organizing dynamics of life as an evolutionary system in terms of exploring, allocating, utilizing and allocating resources both internal and external. Therefore, the spirit of entrepreneurship guides self-organized behavior and is key to the well-being and sustainability of life.

Replacing “social frontier” with “place” in both geographic and cultural senses, R. radhakrishnan (2003) discusses without direct mentioning how the spirit of entrepreneurship reflects the attitude toward learning and how it generates knowledge and creates value through negotiation in a cross-cultural situation. He holds that,

“… Places are both real and imagined…we can know places that are distant as much as we can misunderstand and misrepresent places we inhabit. As Arjun Appadurai, among others, has argued, neither distance nor proximity guarantees truth or alienation. One could live within India and not care to discover India or live “abroad” and acquire a nuanced historical appreciation of the home country, and vice versa. During times when the demographic flows of peoples across territorial boundaries have become more the norm than the exception, it is counterproductive to maintain that one can only understand a place when one is in it. It is quite customary for citizens who have emigrated to experience distance as a form of critical enlightenment or a healthy “estrangement” from their birthland, and to experience another culture or location as a reprieve from the orthodoxies of their own “given” cultures. It is also quite normal for the same people, who now have lived a number of years in their adopted country, to return through critical negotiation to aspects of their culture that they had not really studied before and to develop criticisms of their chosen world. Each place or culture gains when we open it to new standards” (p. 126).

Since the early 1980s economists have been interested in a number of new approaches and issues in welfare economics. The capabilities approach in welfare economics has suggested including what people are free to do or be in welfare assessments (Sen, 1993). When it comes to
development policy-making, the evolution of the Human Development Index has been influenced by this emphasis on multi-dimensionality and freedom/autonomy, especially their impact on life satisfaction, which the informants in my dissertation research will also be interviewed about.

1.3.6 Innovation

As humans navigate through and learn about the constraints in living our life, our value is demonstrated in accumulating knowledge in creating and designing entities and processes that can help us transform those constraints or our interactions with them to increase our degree of self-organization. Those transformative creations and designs, be they scientific, technological or social innovations, as the emergent properties of various human activity systems, grow our evolutionary capability or competence.

Calling innovation as a type of “evolutionary systems design”, Laszlo & Krippner (1998, p.21) suggest, it creates “evolutionary pathways for the sustainable development of life on earth” and “seeks to develop evolutionary competence,” which “refers to the state of self-actualization (of individuals and groups) that is marked by the mastery of the knowledge, the abilities, the attitudes, and the values required for” self-organized behavior, “and therefore, for the pursuit of sustainable modes of being.”

Regarding their social dimension in particular, innovations in the path of socio-economic development (Cao, 2005; Yip, 2010), in the industrial configuration of resources (Leger, 2005; Marx, 1967; Williamson, 1987), in the organizing and management of an enterprise (Knight & Kim, 2009), in international cooperation and communication, and in the philosophy and attitude
toward living one’s life (Sennett, 1998), for example, all contribute significantly to the evolution and sustainability of human activity systems individual or collective.

For example, for SMEs, internationalization is an innovative act (Knight & Kim, 2009). Compared to the large multinational enterprises (MNEs), international SMEs have well-acknowledged constraints on tangible resources, access to capital, and legitimacy and credibility, especially when it comes to internationalization (Knight & Kim, 2009; Lounsbury & Glynn, 2001; Lu & Beamish, 2001; Penrose, 2009). In order to survive and grow, SMEs innovate ways of coordinating and integrating limited resources internationally in business development, production, marketing, product/service diversification, or hiring/firing logic, etc. (Penrose, 2009), to transform those constraints or constrained relationships (Dev et al., 2002; Johnson et al., 2006; Knight & Kim, 2009; Kogut & Zander, 1993).

The relative value of innovation is contingent upon the efficiency in organizing resources (Spencer, 1886). To illustrate this, Nelson and Winter (1982a) give us the following example:

Incentives to be the first to invent, to get the patent, may induce many firms to try to invent early. Barzel (1968) and others have pointed out that, under certain assumptions, in such a competitive race too many resources are applied too early. Given a set of established patents and imperfect license markets, individual companies can make money from projects that would not be worthwhile had they access to the best technologies developed by others—projects that yield little social value. The stronger the patent rights, the greater the importance of the oil pool problem relative to the template problem. The template problem tends to hold total R&D spending to a level below a social optimum. The oil pool effect may spur R&D spending, but toward an allocation of effort that is socially inefficient (p. 387).

As a longitudinal ethnographic research starting in 2008—the beginning of the recent global financial crisis, this project takes its departure at a multinational pharmaceutical CRO
company, run by a first-generation Chinese-American immigrant. This organization is representative of the contemporary international SME and transnational entrepreneurship. One of the major contributions this research aims to make is to capture the innovative elements at four dimensions of a network-based social ecosystem. These dimensions are: 1) the nature of the international SME and transnational entrepreneurship, 2) the industrial evolution of the global pharmaceutical industry, 3) the cross-border cooperation and collaboration on global resource integration, knowledge flow and value creation (Saxenian, 2006; Zhou et al., 2007), and 4) the adaptation in the life of the global Chinese diaspora as casted in the research context. To do this, I ask the following three sets of research questions:

**Research Question Set 1**: What embodies the uniqueness of the contemporary international SMEs and transnational entrepreneurship in the outsourcing sector of the US-based global pharmaceutical? How does that uniqueness sustain competitive advantage? What are the innovations and controversies characteristic of the contemporary globalization that are associated with that uniqueness?

**Research Question Set 2**: Who comprises the social network of the international SME and transnational entrepreneurship in my research context – a Chinese-American-run multinational Contract Research Organization in the outsourcing sector of the US-based global pharmaceutical industry? How does the network-based mechanism function to coordinate and integrate resources from inside and outside of this firm? How do transnational social capital, large multinational enterprises and Chinese state and local governments, each, play a role in the global resource
integration and coordination, knowledge flow, and value creation of the pharmaceutical production?

**Research Question Set 3:** What are the innovations and controversies in the identity building and life philosophy of the Chinese diaspora featured in my research context in the living of both their professional and personal life? How do those innovations and controversies speak to people’s cultural necessities of their value systems, which collectively reflect the historical trajectories of the system of Chinese culture? Comparing with the political and economic systems of the society of China, how does the system of Chinese culture shed light on the contemporary role of China on the world stages?
CHAPTER 2: METHODS

This chapter discusses the methodological paradigm and techniques used in my research. It also records the stories of my two entries to the research site, as well as my reflection as an ethnographer. To facilitate the understanding of the research context, the working mechanisms of both the pharmaceutical and CRO industries are also introduced here.

2.1 The Paradigm Beneath

Denzin and Lincoln (1994) surveyed the diversity of interpretive paradigms, with positivism, on the one end, and postmodernism, on the other. The former features a reality that can be studied and understood objectively, while the latter casts radical doubt on the objectivity of the reality. For postconstructuralists, “there can never be a final, accurate representation of what was meant or said, only different textual representations of different experiences” (Denzin, 1996, p.132). Between the two extremes come the middle-ground positions of postpositivism and constructivism. According to Denzin and Lincoln (1994), postpositivism assumes that reality cannot be fully apprehended, but only approximated. Postpositivists use multiple methods to explore as much of reality as possible; emphasize the discovery and verification of theories; and apply traditional evaluative criteria, such as validity. Constructivism is defined as employing “a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and subject create understandings), and a naturalistic (in the natural world) set of methodological procedures” (Denzin and Lincoln, 1994, p.13). Trustworthiness, credibility, and confirmability are its evaluative criteria. These middle-ground positions of postpositivism and constructivism have shaped the interpretive paradigm in my research. Concerned with the holistic and integrative
exploration of phenomena and events, the resource-based systems approach I propose pertains to both epistemological and ontological situations (Lazslo & Krippner, 1998).

For globalization and organization studies, Eurocentric foundations of theories dominate. These theories range from motivation, attribution, equity, and contingency theories, to critical theory, postmodernism, and feminism (Asante, 1987; Boyacigiller & Adler, 1991; Hofstede, 1984; Sanborn, 1993). However, theories applied to traditional types of organization may be less relevant to the new economic and business forms under postmodern illusion (Giddens, 1999).

Clearly, issues of theoretical parochialism are complex, and there is a great need for more sophisticated and programmatic ethnographies, case studies, and comparative research that are consistent with the multivocal, equivocal, and embedded activities that comprise organizing (Stohl, 2001, p.361). And this is also the area this research aims to contribute to. Also, as McCarthy and his colleagues have claimed that, “the Anglocentric ethnographic gaze… [of] cultural studies…has now been exhausted, rendered archaic by the monumental shifting of paradigmatic conditions and multiple diasporic figurations that exist in the contemporary moment” (McCarthy, et al., 2007, p. XVII). “The advantage of the systems sciences is their potential to provide a transdisciplinary framework for a simultaneously critical and normative exploration of the relationships between and among human beings and their social, cultural, and natural environments,” Laszlo & Laszlo (1997, p.2) suggest.

Social and psychological phenomena tend to resist quantitative modeling due to some basic difficulties in boundary identification and the lack of clear-cut and agreed upon goals (Lazslo & Krippner, 1998). Regarding the nature of the systems approach in addressing this issue, Laszlo & Laszlo (1997, p.10) summarize,

Within the field of the humanities systems-oriented inquiries are not necessarily quantitative in execution. This is true especially in regard to the application of systemic
theories to social phenomena…In these and similar difficult cases, systems theory performs a qualitative heuristic function: it attempts to identify specific entities capable of being modeled as systems, and wider areas as their relevant environment. As Majid Tehranian remarked, the systems thinker's perception always incorporates an element of human intuition. (M. Tehranian, *Toward a Systemic Theory of National Development*. Tehran, Iran, 1974, p. 68.) Implicit here is the notion that an observer engaged in systems research will "give an account of the world, or part of it, in systems terms; his purpose in so doing; his definition of his system or systems; the principle which makes them coherent entities; the means and mechanisms by which they tend to maintain their integrity; their boundaries, inputs, outputs, and components; their structure." (Peter Checkland, *Systems thinking, systems practice*, New York, 1981, p. 103.)

Through critical systems thinking, which accommodates “the knowledge-constitutive interests of Jürgen Habermas and the interpretive analytical orientations of Henri Foucault”, “a meta-methodology involving constant critical reflection” is suggested (Laszlo & Laszlo, 1997, p.14). This new methodology critically applies various systems approaches to problem solving, which is more and more relied upon by studies of civilizational progress and organizational change.

Instead of the mere quantitative modeling of entities and processes, the systems approach proposes “to model complex entities created by the multiple interaction of components by abstracting from certain details of structure and component, and concentrating on the dynamics that define the characteristic functions, properties, and relationships that are internal or external to the system (Laszlo & Laszlo, 1997, p.11). In doing so, it pursues five areas of commitment:

1) critical awareness,
2) social awareness,
3) complementarism at the methodology level,
4) complementarism at the theory level, and
5) human emancipation.

Through critical awareness, a person is enabled to analyze the assumptions, strengths, and weaknesses of the theoretical underpinnings of the systems methods and techniques brought to bear both at a particular level of the system under consideration, and at the level of the system as a whole. Social awareness brings into play the societal or organizational climate that influences the acceptability of a given systems approach at a particular time. Complementarism of methodology addresses the use of different sub-methodologies for the attainment of particular tasks. Theory-complementarism advocates respect for different theories while seeking to address constitutive interests. Finally, the notion of human emancipation seeks to raise the quality of life and work for the persons involved in a systems intervention (Laszlo & Laszlo, 1997, p.14)

As for how systems thinkers formulate their perception of social reality in terms of what is a system, and what is an environment, and then start the process of a systems analysis, Laszlo & Laszlo further,

Observers in the context of systems science have a clear conception of their mission as an integral part the social system with which they work. In performing a systems analysis of a problem or situation, they start from the problem, not from a preconceived model. Once the manifestation of the problem has been identified and described, they can proceed inward to the sub-systems and outward to the environment (p.11).

Ethnography, in matching with the holistic paradigm and heuristic function of the systems approach and in fulfilling the tasks of system analysis, becomes the methodological staple of this dissertation research. Ethnographers are provided with opportunities for personal, social, and political intervention (Cochran-Smith & Lytle, 1993; Stewart, 2000). Due to the relationships with participants and the developing emic understandings, ethnographers are in a unique position to help speak across cultures on behalf of the group being studied (Basso, 1996; Philips, 1983;
Radhakrishnan, 2003), and to help identify paths of changes to support community goals and policy-making (Engstrom, 1996).

2.2 Data Collection & Analysis

Following the principle of the meta-methodology discussed above, I employed a methodological opportunism with a resulting eclecticism of methods in my research. In other words, I considered any approach that could help inform, organize and reconstruct the cultural meanings from narratives and any other forms of social discourse, stated or unstated, explicit or implicit. As Naomi Quinn (2005a) points out, “there is an ongoing need to invent appropriate methods, to match these to opportunities provided by existing data, and to pursue the logic of each new finding to the next analysis” (p.79).

Being eclectic in terms of both research topics (characteristic of linguistic anthropologists) and discourse types (characteristic of psychological or other cultural anthropologists), my research was conducted through participant observation, in-depth interviews, and content analysis. Pseudonyms have been assigned to all my research subjects as instructed by the Institutional Review Board (IRB). They also read and signed the informed consent before their participation, which informed them of the risks of their involvement in the research, their rights as participants including the right not to answer any questions, and the uses to which I planned to put the results of the study.

For data recording, I used a combination of field notes and voice-recording. While field notes might be rendered in “tacit, taken-for-granted, cultural understandings of the interviewer—which are not necessarily those of the interviewee” (Quinn, 2005b), this effect could be minimized by voice-recording. Moreover, detailed field notes can improve the analyses of data
obtained through voice-recording, and sometimes might be only way to collect data due to privacy concern or situational accessibility. Therefore, these two means can be supplemental to each other.

For data analysis, I followed Miller et al.’s suggestion that, “early analysis,” focused “on developing categories that account for the diversity and breadth of the data being collected. As the analysis progressed, categories were filled in with more depth, and interconnections within and across categories were analyzed. Particular examples have been extracted for in-depth analysis” (2003, p.227). Primary data were supplemented with secondary material such as annual reports, brochures, websites and newspaper articles (Knight & Kim, 2009). Also, triangulation was applied to compare and integrate data from different sources (Denzin, 1978; Marshall & Rossman, 1995; Rizzo et al., 1992).

2.2.1 Interview

Interviews questions were designed to target issues across varied individual, organizational, industrial, and other social dimensions. Informants chosen represented varied history with, relevance to and ranks at the company, as well as ages and genders. My goal is to find not only patterns on each dimension but also the continuity and fluidity among them.

In particular, within the context of this company (mostly comprised of Chinese employees), the definition of majority/minority may be different from its larger social context (the country of the United States) (Yancey et al., 1976; Okamura, 1981; McGuire et al., 1978; Stayman and Deshpande, 1989). Therefore, I would like to find out how individuals organize their own cross-defined organizational and social roles and identities in the continuums rather than dichotomies of majority-minority and advantaged-disadvantaged.
Furthermore, the snowball technique was tried and promoted in the discourse of my ethnography to reach and compare the various other informants accessible from both inside and outside of this company.

After learning from the criticism made by Briggs (1986) on traditional interviewing, I summarized a few guidelines to follow as I interviewed people.

First, I applied an unstructured and open-ended strategy, interrupted only by clarifying questions (Luttrell, 2005). The control of the conversation in my interview was mainly granted to interviewees, conveying my “openness to the interviewee’s own perspective, unique insight and special knowledge, and being an extraordinarily good listener and a nonjudgmental one” (Quinn, 2005b, p.9). Pre-selected interview questions were not asked until the very end of the series of interviews with each interviewee (Quinn, 2005a). However, for each interview I conducted or otherwise through observation, I was guided by and trying to seek answers to the following questions:

Toward the company:
1. Is the company really successful as it seems on the ranking and on its expansion?
2. How have the people been making these successes?
3. Why can they make these successes?

Toward people:
1. Are these people happy living in the US?
2. Are these people happy working at this company?
3. Why are they happy or not happy?
4. Who were they? Why and how did they come to the US? What has it taken for them to be who they are now?
5. Why and how did they come into the industry?
6. Why and how did they come to the company?
7. How do their life experiences compare to each other, and compare to mine or my counterparts?
8. What can I learn from knowing these experiences to better understand and live the life here?
9. What does their life satisfaction look like?
10. How do they think of the current financial crisis?
11. What are the particulars about women in my research context?

In terms of recruiting informants, an unstructured strategy meant that the interview invitation might be sent out or the interview might be conducted during or right after certain spontaneous situations when the informants had the most “narrative urgency” (Luttrell, 2005, p. 247). In other words, they were right in the mood or felt the urge to talk about certain things. However, I had to judge appropriately according to each specific situation, on whether to use voice recorder, to take notes, or to just memorize the conversation. As I envisioned, topics such as the history and facts of the company were able to be voice-recorded. But for certain sensitive issues like power, culture, and gender, etc., I personally preferred to avoid direct recording, especially when an informal interview took place spontaneously at the research site itself, to encourage the truthfulness of the narratives and to protect my informants as well as myself. For interviews at other more personal and private settings, I always checked with my informants first if they were comfortable with the voice-recorder.

Second, I interacted with the interviewee by using “psychoanalytic listening” (Luttrell, 2005, p.260) and eliciting “expository discourse” to minimize 1) indexing of shared cultural assumptions (Hill, 2005), 2) foregrounding “the referential content of surface forms to the neglect of the web of meaning on which the interviewee constantly draw” and 3) privileging “conscious models and explicit presuppositions over that which is outside the limits of the interviewee’s awareness” (Quinn, 2005b, p.7, see also Briggs, 1986). Especially in the cross-cultural research context of my own, the only cultural model that I have been probably familiar is
the Chinese one. For other cultures or the combination of other cultures, I had to bear a lot of assumptions as I performed my daily job and research activities. My years of journalistic experiences before and after I came to the United States definitely helped to overcome some of fallacies of “indexing,” “foregrounding,” or “privileging” things. However, as I will discuss later, building communicative competency through daily observation and participation is important in order to increase ethnographers’ sensitivity to those easily lost meanings.

Thirdly, I explored the individual informant’s life stories in my interviews. Although cross-cultural dialectic is the focus of this paper, culture is not the only constraint on what individuals are free to think, say, or do; the individual’s own distinctive lifetime of experience, also gives indelible structure to the individual’s ongoing concerns—the structure of the personality (Burt, 1992; Strauss, 2005). Specifically in my research, I had been interested in the formative experiences that gave rise to one’s identity and to the inevitable lifelong ambivalence/conflicts surrounding identity (Luttrell, 2005). I adopted Luttrell’s dual approach developed when she unfolded the life stories of those women whose school experiences were inquired (Luttrell, 2005). She says,

“I elicited the women’s life stories to learn something about the women and the structural as well as psychological processes that their stories were presumed to mirror—the ‘life-focused’ approach. I was also using the ‘story-focused’ approach (Peacock and Holland, 1993, p.370), paying close attention to the structure, coherence, and forms of discourse the women used to tell their stories. This dual approach enabled me to see that the women were constructing their identities and forging social relationships as part of the storytelling process…I also turned to a psychoanalytic approach to life-story telling and listening, to help me understand the divided sense of self I noted in the women’s discourse” (p.248).
Split sense of self refers to “the tenacious pattern where [people] would break themselves or others into two parts, one side idealized (‘good’) and the other devalued (‘bad’)” (Luttrell, 2005, p.259). While splitting belongs to individual psychic conflicts, it may also be suggestive of personal conflicts and larger cultural influences (Luttrell, 2005), especially in the contemporary discourse of globalization.

2.2.2 Participant Observation

Nonetheless, I have to admit that interviews may fall short of capturing the complexities of social relationships that are often revealed in spontaneously occurring group interactions. However, the use of participant observation in my research helped make up for this weakness of interviews, allowing me the encounter of natural situations where people interacted on the relevant issues of/beyond my research interests (D’Andrade, 2005). In my research, for example, narratives at conferences, regular group meeting, lunch room, coffee hours, or friend talks, provided a potential source of rich discourse for cultural analysis.

My participation in the organization where I conducted research helped me develop the intimacy of the dyadic relationship with the interviewees. The goal is that, even when an unspontaneous interview takes place, it would take on a life of its own, as a highly specialized kind of entextualized discourse (Quinn, 2005a). In other words, my relationship with my informants could be ideally at some point where what they do in the interview, represents what they do spontaneously in various other contexts, eliciting the “narrative urgency” they employ to “define and defend their selves and identities” (Luttrell, 2005, p. 247).

Through participant observation, I also tried to build up my communicative competence specific to my research site—a science/technology-driven, service-oriented, and cross-cultural
corporate atmosphere: knowing which expressions to be used under what circumstances to convey which meaning (Briggs, 1986). My undergraduate study in pharmaceutical science and management in China, my three-month summer internship experiences at the company, and my graduate study of international business and cross-cultural communication in the United States, have made this process less difficult. However, all these cross-cultural and cross-disciplinary experiences and education did not teach me any rule of thumb to deal with each specific situation. Instead, they have made me more aware of my lack of knowledge or understandings of others, more careful in handling stereotypes, and more open-minded for differences, pluralities and coexistence. The communicative competence helped me detect patterns of discourse genres within different contexts and adapt the transferability of my data collection techniques to accommodate the indexical differences across culture, class, gender, age, and educational level (Briggs, 1986; Quinn, 2005b). After all, the ethnographic encounter is a communicative event, where the intelligibility and cultural validity of the findings depends on the ethnographer’s ability to adapt his or her research practices to local communicative norms (Briggs, 1986; Hymes, 1974; Miller, Hengst, & Wang, 2003; Ochs, 1988).

As a key to penetrate participants’ meaning systems, “ethnographers must familiarize themselves with the participants’ community—the physical and institutional settings in which they live, daily routines that they and their companions follow, the beliefs that guide their actions, and the linguistic and other semiotic systems that mediate all of these contexts and activities” (Miller, Hengst, & Wang, 2003, p.223). For a multicultural environment like my research site, the work of an ethnographer was also multiplied. Under the sweeping wave of economic globalization, the physical and/or institutional settings here may very likely reflect the globalized localities—the rational and standardized global best practices that are originated from the local
capital centers in the West. However, at this local cross-cultural organization and diasporic community—the localized globality, different persons may have different interpretations of the same institutional structures. The current global financial crisis and the economic recession in the US particularly call for the research urgency here.

As for the research on the international SME and transnational entrepreneurship in particular, in-depth case analysis has obvious advantages (Knight & Cavusgil, 2004). Firstly, due to its close association with the temperament or personal qualities of individuals, the slippery concept of enterprise or entrepreneurship is not easy to work into formal economic analysis (Penrose, 2009). Secondly, regular case studies and survey research through interviewing managers usually aim to establish the correlation between a firm’s financial performance and the participants’ subjective interpretation of the normative questions and concepts constructed by researchers (Zhou et al., 2007), such as international orientation and marketing skill. It remained intriguing to ask how and where exactly those intangible resources and tacit knowledge were taking effects in the daily operation of an actual company, where the social, historical and cultural background of the individual actors could come into play to decipher the causal ambiguity, especially in the contemporary multicultural business settings featured by transnational immigrant entrepreneurship and international SMEs. The heterogenetic and idiosyncratic nature of these research subjects rendered a special advantage to the methodology of ethnography carried by participant observation to answer that question.

2.2.3 Systems Analysis

The four step approach of systems analysis architected the structure of my research results. Proposing its potential to address entities as diverse as atoms, organs and organ system,
individuals, and societies through the common rubric of the systems sciences, Laszlo & Laszlo (1997) conclude,

The starting point is consideration of the embedding context that includes, and is to some extent defined by, the phenomenon under consideration. The second step involves description of what may be defined as 'sub-wholes within the embedding whole': identifiable discrete entities existing in their own right within the larger framework of the overall ensemble. Third, attention shifts to the specialized parts within the identifiable wholes, with emphasis on understanding the structures, their compositions and modes of operation...The fourth and final step refocuses on the embedding context, integrating the perspective obtained at each of the preceding steps in an understanding of the overall phenomenon, including its internal and external context. Key to this understanding is the emphasis on function as well as structure, on relationships and bonds in addition to the elements and components to which they pertain, so that the resulting understanding of the entity or process under consideration is expressed in terms of its roles and functions within the embedding whole. (p.12)

For my research per se, the phenomenon under consideration is the production and communication activities of a transnational Contract Research Organization (CRO) company run by a first generation Chinese-American immigrant that is typical of contemporary transnational small and medium-sized enterprises (SMEs) and entrepreneurship. It is embedded in the outsourcing sector of the US-based global pharmaceutical industry. To illustrate its role in the global process of resource integration, value creation, and knowledge flow, I then escalated the analysis to events and activities taking place at system levels vertically and horizontally along the continuums where the level of a firm is at the center. These systems as a whole form the social network of the firm. Specifically, they each contextualize the industrial evolution of the CRO business and the restructuring of the pharmaceutical industry, the professional and personal life history of the Chinese diaspora, China’s culture-based economic and social development
mode, as well as other global economic events, in particular, the recent world financial crisis. As a result, I systemically displayed the evolutionary dynamics of globalization in organizing resources worldwide and transforming entities and processes vertically across the interacting transnational, national, institutional, industrial, organizational, ethnic, communal, familial and individual levels. I also addressed the innovations and controversies evolved horizontally within the interlocked cultural, historic, social, economic, political, and technological dimensions.

2.2.4 Narratives and Discourse Analysis

Narratives are important in my ethnographic research, as they are to “research on discourse in sociolinguistics that examines narrative ‘evaluation’ (Labov, 1972 Labov & Waletzky, 1967), linguistic anthropology that examines ‘voicing’ or ‘footing’ (Bakhtin, 1981; Bauman, 1986; Goffman, 1979; M.H.Goodwin, 1990; Hill, 1995; Koven, 2002; Ochs & Capps, 2001; Voloshinov, 1973; Wortham, 2001) and conversation analysis (M.H. Goodwin, 1990; Jefferson, 1978, 1984; Mandelbaum, 1987, 1989; Sacks, 1974) that addresses the participant frameworks out of which stories emerge and which they transform” (Miller, Fung, and Koven, 2007). The process of negotiating and renegotiating meanings via narrative has been called “one of the crowning achievements of human development” (Bruner, 1990, p.67). Cultural psychologists argue that the role of stories can be most fruitfully studied if we see narratives as embedded social practices rather than purely a form of representation (e.g., Bauman, 1986; Miller, 1994; Wortham, 2001). In this way, “it becomes possible to see how stories reverberate across time and space, connecting people to other people, other stories, and other activities, and infiltrating their hearts and minds” (Miller, Fung, and Koven, 2007, p.609).
Specifically, I used discourse analysis in my research. Perspectives from both linguistic anthropology and psychological anthropology were taken into consideration. As summarized by Quinn (2005b, p.14), the focus of linguistic anthropology is “on patterns in the structure of such narratives themselves, and in the process of their telling: what about them makes them tellable, for instance, or how they get launched, or how their temporal sequencing is managed, or how children, over the course of development, are incorporated into their telling, or how these narratives embody moral assessments, or how their plots are structured,” while “analysis of these moral messages themselves is not the point.” For linguistic anthropologists, emplotment is viewed “as a collaborative, sense-making practice that attempts to reconcile sociocultural and personal realities” (Ochs and Capps, 2001, p.207), but these realities are not explored as holistic mental schemas to derive cultural models (Quinn, 2005a), as they are otherwise emphasized by psychological anthropologists.

In cultural analysis of discourse, scholars share the assumption that “people in a given group share, to greater or lesser extent, understandings of the world that have been learned and internalized in the course of their shared experience, and that individuals rely heavily on these shared understandings to comprehend and organize experience, including their own thoughts, feelings, motivations and actions, and the actions of other people” (Quinn, 2005b, p.2).

The theoretical foundation of the understanding of culture includes cognitive anthropology (also known as cultural models or cultural schema theory) and psychoanalytic anthropology. Discourse is deemed here, as “the best available window into cultural understandings and the way that these are negotiated by individuals” (Quinn, 2005b, p.3). Culture encompasses both the largely taken-for-granted and invisible assumptions and the visible
but often cryptic manifestation. This echoes my earlier discussion of cultural vs. normative necessities.

Cultural understandings are learned from experience, which often occurs in nonlinguistic contexts. Therefore, what people can state is “not an unproblematic record of the cultural understandings that people have in mind when they say them, and certainly not the only record of these shared understandings, but simply the fullest and most decipherable record available” (Quinn, 2005b, p.4). Cultural analysis needs to tease out and reconstruct the underlying cultural meanings from the clues provided by discourse, for which this research therefore used a mixed methodology in data collection.

Discourse, in my research, refers to both the linguistic sense of language in use, either spoken or written (for example, metaphor usage, recurrence across various discourses of underlying propositions, departures from temporal narrative sequencing, subtle linguistic markers of the cultural standing of ideas, nonobvious asymmetries between narratives told by different cultures, classes, genders, or occasional metacommments on what had previously been said—to name a few), and the Foucauldian understanding of social discourse--a way of talking and a set of associated practices, forms of subjectivity, and power relations, identified with the subgroups of society.

Claudia Strauss (2005) gives us some practical tips on how to uncover taken-for granted cultural assumptions:

“When a speaker gives evidence to support a position, they assume that this kind of evidence can be trusted. When they discuss one topic in connection with another, without any explanation for the connection, they take for granted the cultural models that explain the connection. When speakers describe an object or sequence of events, they omit details they assume they do not need to explain. When they tell a story, it always has a point: the narrative evaluation, in sociolinguists’ terms. The narrative evaluation reflects cultural
assumptions about what is funny, shocking, embarrassing, and so on. In general, you could take what your interviewees say and consider what else they have to assume for those statements to make sense. It helps to keep in mind some alternative ways of thinking about the topic that one might find to put your interviewees’ ideas into perspective. If you are analyzing cultural models from outside your culture or subculture, your sense of alternatives will be provided by the contrast between your cultural models and your interviewees’. If you are interviewing people whose cultural models you share, awareness of cross-cultural and intracultural variation will keep you alert to possible variation in schemas (p.208).

In terms of voice, “while a given person will usually have certain favorite expressions that are always typical of their voice, most people switch voices, depending on the context. A voice can be delineated by keywords, phrases, metaphorical imagery, sentence structures, and emotional tone…If someone uses the same voice to talk about A and B, this suggests that A and B are closely connected in their personal semantic network (PSN)...Contiguity and/or use of the same voice show what cognitive representations are closely connected in someone’s PSN” (Strauss, 2005, p.209). When we repeat delineating a PSN for enough people, clusters of shared association—cultural model, will emerge (Strauss, 2005).

Claudia Strauss (2005) found three general cognitive patterns on how people mentally organize their conflicting ideas or the diverse social discourses they have internalized. This was helpful in my research of the multiplicity of identity.

“When speakers compartmentalize (Singer 1972; Weiss, 1990) conflicting ideas, they hold them in separate, largely unconnected cognitive schemas and are usually unaware of the conflict between them. Speakers who are ambivalent are aware that they seem to hold inconsistent ideas and show signs of psychic conflict as a result. When speakers integrate multiple social discourses, they draw on them selectively, blending them into a view that
is consistent and makes sense for them, even if it does not fit any standard public theories” (p.223).

Obviously, the middle of these three patterns would most likely undermine an individual’s wellbeing, as suggested by Richard Sennett as well (Sennett, 1998). Given there indeed were identity conflicts existing in my research context, it would be interesting to observe where each of the individuals stands along the continuum of them, as people are differentiated by a number of factors, such as job function, gender, education, age, religion, political affiliations and personality, etc. I believe that, lessons learned here at this localized globality, could shed light on the issues of conflict resolution facing other resource-endowed units such as a community, a nation, and a society in the globalizing world today.

Strauss (2005) also provided the practical tips on detecting those patterns:

“I suspect that a speaker is compartmentalizing their different ideas if I find passages whose ideas are at odds, using the jargon and phraseology characteristic of different discourses, expressed in separate speech contexts (e.g., in connection with different topics, at different points in a single interview or different days in a series of interviews). Ambivalence is indicated by ideas that are at odds, articulated in the characteristic language of different social discourses, but in close proximity to each other along with indication that the speaker feels a conflict (“but on the other hand…,” “I don’t know,” and nonverbal expressions of frustration, such as sighs). Cognitive integration is indicated by phrasing and contents that show that although the ideas in question were drawn from disparate social discourses, they are closely linked in the speaker’s personal semantic network because as the speaker expresses them the ideas fit together, they are expressed in the same context, and the speaker shows no sign of discomfort or conflict when switching from one to the other” (p.224).

2.3 The Entry Stories
Peter Checkland (1981) calls for that the observer engaged in systems research should "give an account of the world, or part of it, in systems terms; his purpose in so doing; his definition of his system or systems; the principle which makes them coherent entities; the means and mechanisms by which they tend to maintain their integrity; their boundaries, inputs, outputs, and components; their structure" (p. 103). The researcher is an integral part of and key to understanding the findings of the ethnographic research. In conducting participant observation in my research, there are two contexts: the CRO company and the diasporic Chinese. I am a participant at the company as an employed intern, while I’m also a member of the Chinese diaspora. I acknowledge my limited objectivity as a believer in postpositivism and constructivism. Therefore, in this section, I would like to share some of my own relevant background and life histories through the telling of entry stories and the self-reflection and justification on being a contextualized ethnographer.

2.3.1 First Entry in 2008--I Have a Job for You

Near the end of my undergraduate study in Tianjin, I met a visiting professor Dr. Han who was referred to our college by my advisor Victoria. Victoria said they met at a professional conference. At that time, Dr. Han was a senior officer at the US Food and Drug Adminstration (FDA) specialized in pharmacometrics. Coming to the United State in October 1986, first as a visiting scholar then as a doctoral student, Dr. Han was among the earliest group of Chinese-American immigrant scientists who had broken into the government office of FDA. With his expertise in new drug development and government regulation in the United States, Dr. Han was also actively involved in teaching at several top universities in China, as well as consulting for Chinese pharmaceutical companies with internationalization ambition on how to obtain the
marketing permission to sell their products in the United States. Retiring from FDA, Dr. Han is now the department head of pharmaceutical regulation and administration at my undergraduate college. He is also the vice president (VP) at the biggest Chinese traditional medicine company Tasly and the Chief Executive Officer (CEO) of its North American branch.

When doing my undergraduate thesis research, in addition to the technical pharmaceutical science knowledge, I integrated the relevant social science research subjects and methodologies, such as those in media, public policy, business and economics, while analyzing the biopharmaceutical industry of the municipality where my university was located. In fact, my research topic could have found a perfect fit in Dr. Han’s department, if he had come to our university and set up the department of pharmaceutical regulation and administration earlier in my college. The last time I saw Dr. Han in China, I gave him a finished copy of my thesis as a gift. He read my thesis and commented that it was a very publishable work. Intrigued by my description of the Tianjin Economic - Technological Development Area (TEDA), he even made a field trip there. He also thought the change of my major into media was a great match with my personality. We had been staying in touch through emails ever since.

Under my impression, in the couple of times when I updated Dr. Han my progress during my study at Kansas State University (KSU) and mentioned about my career plan, he always told me, “Don’t worry. If you need help, I can find a job for you…” At the end of my master’s program at KSU, my original plan was to go to a PhD program. However, my boyfriend had to leave this country because of job loss. Financially, the possibility for us to stay together in the United States would be much higher if I could work full-time. This problem confounded the decision-making on the next move of my career direction. I therefore expressed to Dr. Han my availability for a position. We had been working on an opportunity, but the financial outlook
resulting from that opportunity ended up being no better than if I went to a PhD program with an assistantship. So I eventually chose for the doctoral program.

On July 10, 2007, I arrived in Illinois for my PhD study. About eight months after that, on March 22, 2008, during my trip back to China to attend an academic conference in Shanghai, I received an email from Dr. Han as below –

“Jenny,

How r u? are you in PhD program now? I was calling your cell phone but it is disconnected. Please give me a call, I have a job for you in DC area. The pay rate is at $50,000 to $60,000 per year, depend on how well you go through the interview :) 

Please let me know if you are interested. I will need a CV from you.

Regards,

Dr. Han”

In the email back to Dr. Han, I thanked him for thinking of me when an opportunity arose, and told him I was in the PhD program at Illinois. I also sent him a copy of my CV and requested more information of that job opportunity, thus showing my willingness to give it a try anyway.

Dr. Han soon replied this way, “…The position I have is to work at a CRO company to lead its branch office in the DC area, with responsibilities to communicate and guide its Shanghai Branch as well. You will most timely stay in Washington DC area to manage the internal office and deal with the external regulatory agencies and customers, and periodically go to international travels for negotiating business deals. The pay rate is to match a MS degree…Since you are in your PhD program now, have no much spare time, I guess it will not fit
you. I guess the boss will not want to have you to work remotely while on your PhD study. He was very much interested in your pharmaceutical background with advanced degree in AD. Let us see what we can do after you’re getting your PhD…” By reading this email, I knew the discussion of this job opportunity was going to phase out again as last time.

On April 4, three days after I finished my trip in China and returned back to the US, I sent another email to Dr. Han to say hi. I also told him that I was thinking about a summer internship for a pharmaceutical company and asked if he had any recommendations. Dr. Han then tried to connect me with that CRO company again. But this time, the connection was made for real.

On the following day, Dr. Han and I talked over phone, clearing away all the potential obstacles or ambivalences on my way to the internship, such as working permit, salary, and location. My hourly rate was $14. I would mainly work for Dr. Han, who was then a consultant for the company’s prospective branch office in Washington DC area. I would first work at the company’s headquarters in the Philadelphia area for a month while Dr. Han was out of town, but would move to DC after he came back.

Dr. Han said, the boss of the company, an old friend of his, would call me soon to make the final confirmation. I waited one day with no answer and then I emailed Dr. Han. In his email back to me, Dr. Han said, “I do not think he will really call you. Do not worry, just be prepared to join us this Summer.”

This little detail left me an impression that some of the procedures at this company might not be very standard or professional. The company is called Leading Edge, Inc., and Dr. Sam Liu is the owner. I noticed that Dr. Han used “us” when he referred to Sam or that company.
2.3.2 Negotiating Another Access in 2009--A Researcher? A Job-Hunter? A Volunteer?

Being inspired by my first-ever industrial working experience, my dissertation idea was right there. I knew exactly what I needed to learn to gear myself up with to embark on my dissertation. When the passion was there, so was the energy. When I returned to campus and resumed classes for the semester of fall 2008, I handled the five courses successfully that semester, when three are usually the norm for my peers. I never felt my mind was so clear in designing my coursework: Educational Policy Studies--EPS 590 Globalization, Communications and Culture; Speech Communication--SPCM 529 Seminar in Organizational Communication; Psychology--PSYC 593 Ethnographic Research Methods; History--HIST 520 Globalization, Urban Culture, and the Politics of "Chineseness"; and Sociology--SOC 581 Survey Research Methods.

I decided to conduct ethnography on Leading Edge for my dissertation research. However, the second access was not going to be easy. Due to the nature of the organizing of the CRO industry, it was not easy to prove the value of an inexperienced graduate to a CRO company, who they had to train and develop. The temporal compression or time pressure was embedded in their production and value creation. The mindset of a typical entrepreneur in this business has not yet acquired the capacity or had the “luxury” to process things like corporate image, internal communication, or employee training or career growth, other than productivity—how many assays a lab scientist can run in one unit of time and how much revenue a division can produce, etc. I seriously doubted Sam would be willing to have me back to work for him while working on my dissertation research. In fact, Dr. Han had indicated this when he initially introduced me that job offer, “I guess the boss will not want to have you to work remotely while on your PhD study.”
Therefore, the negotiation process of my second access to Leading Edge was more like a job-hunting process on the surface. However, I was not completely negative about my chance of working there again, as Charlie, a co-founder and senior vice president of Leading Edge, who I had quite some interaction with during my 3-month internship there in 2008, used to reply my “farewell thank you” email when I left back school, “I look forward to working with you again in the future.”

I had been very mindful of maintaining my ties with Leading Edge since I finished my internship there in 2008. In addition to having casual chats with individual colleagues, I also tried to demonstrate my interests in and values for the company by keeping regular email communication with the company as a whole and targeting a specific individual such as Sam. More importantly, I tried to justify the idea of returning to Leading Edge as my dissertation research site as a result of the inspirations I had received from this company and as my way of making further contributions to them. I strived to avoid triggering their defensive emotions, especially from the owner of the company, while inducing their supports and blessings.

On September 15, one month after I left the company, I sent an email greeting letter to all colleagues using my working email account at Leading Edge. This was also a Monday right after the traditional Chinese festival—Mid-Autumn.

“Dear Colleagues,

How have all you been doing? Hope you had a wonderful Mid-autumn weekend and have had sweet moon cakes with your family.

It's been a month now since I left PA. I'm starting to miss you all. In retrospect of the three months at Leading Edge, my heart is still full of appreciation and inspiration. The
in-the-field working experience makes my schoolwork much more relevant and more interesting, thus easier to comprehend. As a result, I'm really at ease in handling my overloaded coursework (20 credit hours), which will help me graduate sooner. I think the days with you together helped me find the balance in life.

I've decided to focus my dissertation topic on the organizational life of pharmaceutical industry in the age of globalization. I'm writing my proposal and plan to pass my preliminary exam over the winter break. Therefore, ideally, I could come back with you in the spring, say, February. Let's cross fingers and hope everything goes as wished.

BTW, I forgot to leave for you my contact information other than our company email address. You could reach me by email: jyang36@illinois.edu or cell phone: 402-326-8938. Please don't hesitate to let me know if I could be of any help. No matter it's for our company or any of you individually, again, it would be my great honor to be helpful.

Best wishes,

Sincerely,

Jenny”

Another month later, on October 14, I sent Sam an email titled “Mission Statement for Leading Edge” and also copied it to Charlie.

“Dr. Sam Liu,

How are you? I understand your time is very precious, but may I please have your two minutes to read through this email?
After working at Leading Edge this summer, I feel very passionate about this company. I have been conceiving a plan on how I can contribute to Leading Edge. And it's time to submit my answer now.

I plan to conduct my dissertation on documenting the history and development of Leading Edge and Leading Edge people. A group of four world-famous experts in the areas of Management, Marketing, Human Resource, and International Business, will guide my dissertation as my committee. We will work together to help Leading Edge identify problems, address issues, propose solutions and explore opportunities.

Given your permission, I plan to return in February, with my two-year long OPT working permit. As a first step, I want to help Leading Edge generate revenues by joining the team of business development, marketing and sales. My goal is to establish a steady pattern of growing clientele within one year of my appointment. While remaining responsible for client management, secondly, I will focus on building an effective human resource system, to improve employee performance and maintain our competitive advantages. Following that brings my third goal—enhancing Leading Edge's global recognition and anchoring cross-national business partners for long-term sustainability.

Dr. Liu, to be frank, I understand none of these goals sounds easy. But to me, they're all promising. We always need a dream before we are able to realize it, don't we? So please give me this opportunity to fulfill my mission for Leading Edge as well as to fulfill myself.

Best regards,

Your sincerely,

Jenny Yang”

Sam replied me the following day. He also copied Charlie.
“Jenny,

Thanks for writing to me. Your plan sounds good for me. Let's discuss about it in late November since we are currently making some changes here. Call me in later November. We can make decision then.

best regards,
Sam”

I was quite happy with Sam’s response. I felt that the way I was negotiating the second access to the Leading Edge was on the right track. Following his suggestion, on November 24, I contacted Sam again through email and copied Charlie. This time the email was titled “Greetings from Jenny (with suggestions for your reference regarding our company).”

“How are you? I hope everything is going well with your health, your family, and our company. In the summer, you mentioned you were building a stronger and more rational management team and system. And you told me, by the time I came back to see Leading Edge next year, I would expect to see a big difference. So I really wonder how far we have accomplished that goal at present. What's the biggest challenge facing us? How do we plan to cope with it both in the short term and in the long run?

Sorry that I have so many questions. These days I've been reviewing literatures about the history/development of the CRO/pharmaceutical industry, as well as its future trends. Most of the articles are written by the policy-makers and practitioners in the industry. And I find three points particularly relevant and helpful to our company.
First, we could start to put more emphasis on the innovation process of biomarker group. As the market reaches maturation, price reduction or cost control almost seems the only final solution to remain competitive. With its potential to reduce the number of patients in clinical trials with targeted genetic profiles, biotechnology, especially genomics, would be in higher and higher demand in the future. If our company can take an earlier step to produce patented technologies in this area, we would differentiate our services from those of our competitors, without wholly resorting to the self-hurting battle of price competition.

Second, under the current economic and market condition, fostering customer loyalty is especially critical. Sales people need to work on this goal together with project managers. While sales people may use personal ties to obtain a contract, it is the project manager who contacts with the client most frequently exhibiting our truly caring and customer-oriented services, rather than just the lip services paid by the sales rep. Otherwise, our credibility and trustworthiness as a company might be up in the air. For both functions, communication and personal skills should always be emphasized.

Another suggestion related to the second one would be, to cultivate project managers from our internal personnel, instead of only relying on outside staffing. Project managers should not only be technically savvy, they should also be emotionally devoted to the company. The emotional attachment is important to elicit the personal dedication to well serve our customers and stabilize our clientele. After all, as our team grows, we should gradually develop a strategic human resource and personnel training/promotion system to rationalize turnover and retain talents.

As I have analyzed above, I'm attempted to join either sales or project management as my first assignment. I think my education has well prepared me for either of these functions, in terms of both technical science knowledge and business management skills. I had my bachelor's degree in pharmaceutical science and management from Tianjin University, master's degree in pharmaceutical marketing and advertising from Kansas State
University, and PhD in global organizing and cross-cultural communication from University of Illinois.

Interestingly, all my education backgrounds are associated with pharmaceutical industry. Therefore I've decided to anchor myself in this industry as my long-term career path. I choose Leading Edge before I consider any other employers, because I like the open-minded and people-centered management philosophy and the familial working environment here. What's more important is—Leading Edge could provide me a large platform with many opportunities and challenges to demonstrate my values, hone my skills, and explore my potentials.

Dr. Liu, whenever possible, I wish you could consider me an opportunity to learn from you and to learn from the company. Earlier last month you suggested me to call you back in late November for a decision on my request. I would appreciate if you could let me know a date and a time that works best for you this week. I look forward to talking to you then. Thank you very much.

Best regards,

Sincerely,

Jenny”

This time I had generated even better reactions from Sam. He replied about 20 minutes after I sent my email. In his email back to me with Charlie copied to, he said,

“Hi Jenny,

Thank you for writing to me, and your thoughts on our business and growth. I strongly believe you can make great contributions to Leading Edge's future and Leading Edge can provide great opportunities for you to grow your career.
When will you graduate and be available?

I am in Shanghai now and will be back to US on December 1st. Please call me next Tuesday or later. We can discuss about the possible position for you at Leading Edge.

Best regards,
Sam”

I was thrilled to read this email. For the first, I felt I had successfully gained the access to the company after all the efforts I made. Secondly, as I said before, the research access negotiation also simulated a job-hunting process. Therefore, this email more or less had brought me a sense of accomplishment as if I had landed a job.

I called Sam the next Tuesday as he indicated in the email. However, I was greeted instead by his answering machine for the whole day. I emailed him again that night asking for the possibility of a call appointment. The next morning, Sam emailed me back saying that he was crazily busy that week. He asked for my phone number and said he would call me when he had time.

Another month passed. I still hadn’t heard anything from Sam. Several days after the New Year, on January 5, 2009 I emailed Sam again. I needed Sam’s confirmation on whether I had a job at his company in order to decide if I needed to keep the teaching assistantship on campus. If I got the job, I needed to notify the department well before the beginning of the spring semester in February, so that they had enough time to find a substitute.

My financial sustainability while carrying out this research plan has always been a touchy issue for me. My family has long been unable to financially support my education since I went to college. Up to now, I have been totally relying on scholarships and assistantships for both my
education and living. In the two years at Kansas State University, my income before tax was around $7,000 annually. Here at Illinois, it is around $13,000. The several thousand dollars that I have saved from those incomes after taxes and various kinds of bills, have all gone into purchasing and setting up the new condominium for my parents. As the monthly mortgage is going to last for 20 years, the pressure continues on my part. I have been getting more economical ever since than before. I always keep an eye on my savings account, making sure that there is at least something for emergency, in case I lost my source of income. In other words, I do not think I could afford being unemployed while staying in the United States. Therefore, unless Leading Edge hired me or some external funding was available, I would not be able to give up my assistantship on campus to carry out my dissertation research in Pennsylvania.

This time, Sam did not reply to my email at all. I waited for another week and then dialed his office number again. Finally, Sam was there and said that he had called me before but dialed the wrong number. In fact, I just repeated my number for him in my January 5 email. He was honest that he was too busy to read through my email though. Even though I had mentioned many times about my dissertation research, today he suddenly told me that was a concern for him to hire me and that recently the company had tight budget on new hires. He said he needed to discuss with Ray, another co-founder and senior vice president at this company and asked me to contact him again in the middle of next week. The tone of Sam today was totally different from that in his email at the end of last November, when he appreciated my contribution and acknowledged my value delivered in my suggestions from the company’s growth.

At that moment, I felt disappointed and disrespected, and that all the waiting and tracking efforts in the process got wasted. It reminded me of a scenario during my work there in 2008, when Sam disrespectfully ordered an employee who had been working diligently in the
conference room, to free the space for the more importantly-treated investors. Sam used to claim his belief in the importance and values of people and talents, but my feeling was like that, Sam only paid lip service to that claim, while in essence he valued whoever or whatever he perceived as more financially significant to him. I admit that there should be certain emotional detachment for an entrepreneur to run a business. But still I strongly believe that some basic ethics and manners of being a person and virtues in a person’s character should still hold, such as consistency and respect, no matter what. However, from those interactions with Sam, I started to doubt that he was the kind of person he claimed to be.

Though being a little panic and stressful, I sent him another email to address his concerns on the following day. The email was titled “Proposals for Working for Leading Edge.”

“Dear Dr. Liu,

I was really happy that I got the chance to talk with you yesterday. I appreciate your time and you being straightforward with me your questions and concerns. As a major in global business management, I extremely understand your standpoint as the owner of the company. I suggest these proposals, with no intent to defend myself, but for the best benefits of the company. Therefore, Dr. Liu, I really wish you could allocate three minutes to read through this email before we discuss next week with Ray.

As I've mentioned in my October email, my dissertation committee is comprised of four world-famous experts in the areas of Management, Marketing, Human Resource, and International Business. The goal of setting Leading Edge in my dissertation research is to help Leading Edge identify problems, address issues, propose solutions and explore opportunities. As I understand, this is a really worthwhile experience for our company.

When I studied at Tianjin University, I wrote my thesis on Tianjin biopharmaceutical industry, and conducted research at Tianjin TEDA economic and development area, a
district similar to Shanghai Zhang Jiang. My advisor was on the consulting committee for the economic development of TEDA. My research turned out to be very valuable for them.

Anyway, Dr. Liu, if you still have concerns about my dissertation research, I can definitely change this arrangement and follow whatever you see appropriate.

Yesterday, you also mentioned about our current budget status. Even though I'm not from a rich family, I'm also not that type of person who works for money. As I've said before, what I really care about is Leading Edge could provide me a platform with opportunities and challenges to demonstrate my values.

School starts next week. I won't take any courses this semester, since I've finished all my coursework. And I have income by teaching an advertising course. If you don't mind assigning me the work through emails and phone calls, I'm willing to work for Leading Edge as a non-paid part-time volunteer until the company's budget gets better.

On the other hand, if you would prefer me to come to PA for full-time, I will be always available. If you want me to come several months later, I can wait. If you want me to come as soon as possible, I'm fine too. As I've said, I'm very flexible.

So, Dr. Liu, the decision is simple—if you see Jenny as a valuable talent for the company, use her; if not, please feel free to say no.

As I mentioned in November email, I had my bachelor's degree in pharmaceutical science and management from Tianjin University, master's degree in pharmaceutical marketing and advertising from Kansas State University, and PhD in global organizing and communication from University of Illinois. I'm very confident in working at the environment of Leading Edge, and believe I'm capable of multiple job functions--BD, marketing, sales, project management, human resource, etc. So, it really depends on the
company's priority to determine my first assignment. I myself am willing to start wherever I'm most needed. Please feel free to let me know your thoughts.

Best regards,

Sincerely,
Jenny”

Sam did not reply to this email either. The result of the following week’s call was negative as well. Sam said he would let me know if there was opening for me at Leading Edge.

By that time, I had already been working on several proposals for research funds. On March 4, I heard from the Center for International Business Education and Research (CIBER) on campus that they decided to provide $3,895 to support my research. This fund therefore relived me from my stress on my financial concerns at least for the coming summer. Now I could afford the research as long as they allowed me to be physically present in their company. I was willing to go regardless of my employment status. I decided to move to Pennsylvania anyway in the coming summer. At least I could first start conducting interviews with previous colleagues while waiting for the opportunities of entering the company.

On April 4, I emailed Sam again and told him that I was moving to Pennsylvania. I also asked him if there was anything I could help with Leading Edge. Sam replied,

“Jenny,

It's nice to hear that you will move to Philly area in May. At this moment, there is no opening at Leading Edge. We will contact you if there is an opening in May or later.

Keep in touch!
To further show my commitment and determination, I wrote back to Sam,

“Hi Dr. Liu,

Thanks for emailing me back. It's ok that we don't have any formal opening at present. As long as you allow, I don't mind starting as an unpaid volunteer or intern first. For me, experience is more important than money. Hope you could give me an opportunity. Many thanks.

Regards,
Jenny"

My proposal of being an unpaid labor worked! 12 days later, on April 16, rather than sending me an email, Sam directly dialed my cell phone number—he invited me to help with Leading Edge in the area of marketing.

In retrospect, from the first email I sent to Sam on October 14, 2008 to April 16, 2009, the access negotiation process for the second entry took exactly half a year.

### 2.3.3 Reflection on Being an Ethnographer

It is well-known that, to conduct ethnographic research, the researcher plays a huge role in shaping the ethnographic encounter. Nancy Chodorow (1999) gives a clear description of this encounter in the fields of psychoanalysis and anthropology:

“There is no psychoanalysis or anthropology apart from the interpersonal encounter, an encounter that draws unavoidably on the investigator’s power of empathy as well as
observation. Both fields have come increasingly to emphasize the central participatory role and influence of the practitioner, who is no longer seen as a detached scientific observer. They now recognize that what comes to be understood about the subject (culture or psyche) is a product created within a particular encounter or set of encounters. In this encounter, both fields have increasingly emphasized the real emotional effects on the investigator: anthropologists who are not psychologically inclined write of culture shock; those who are psychologically attuned, of anxiety, fear and anger discovered through self observation, introspection, and observation of transferences that emerge in relation to informants or to the culture as a whole; psychoanalysts speak of the widened field of countertransference and the role of the analyst’s subjectivity as well as objectivity in the analytic encounter” (p.134-135).

Even though we strive to represent what we study on and in our subjects’ own terms, we can never avoid that we make sense of what we see and hear according to particular theoretical, ontological, personal and cultural frameworks, with the worry that voices and perspectives of those we study will be lost or subsumed to our own views and interests (Luttrell, 2005). This is in line with Penrose’s proposition that entrepreneurship is slippery concept, as a firm’s opportunities are inescapably subjective to the individual entrepreneur’s perception of resources available to him or her (Penrose, 2009). In summary, in an ethnographic encounter such as my own, the reality perceived by both the researcher and the subject is slippery and fluid.

As in my own research case, I expected to filter my observation and fieldworks through several layers of identification—not the least of which are my mingled roles as a Chinese national, a temporal member of the global Chinese diasporic community, a student from a financially-struggling working-class family, a female and entry-level employee and a researcher. It has been a big challenge for me to simultaneously maintain the split insider and outsider roles throughout the research process (Luttrell, 2005). Also, the process of bringing into focus multiple
perspectives on interactions among Chinese culture, politics of global Chinese diaspora, Chinese emerging market economy and globalization, exposed and tested my own Chineseness (Miller, Hengst, Wang, 2003).

In addition, due to my immigration and financial status as an international student, being employed full-time is my only way to carry out participant observation at that organization. My negotiation of the access to the research site was not only an academic quest, but also a job-hunting simulation. I had to consciously and instantly emphasize and convince Sam with the potential contribution I could make for his business, while keeping my own intellectual pursuit in mind. I sensed his doubt or mistrust on me when I first told Sam that I wanted to work for his company while working on my dissertation, as he immediately came up with the question of how long the dissertation would take. As a result, the whole access negotiation process actually has taken about half a year. I finally got it after I emailed him that I would move (relocate) to Pennsylvania in May (2009) and I was willing to start as an unpaid volunteer or intern even if they did not currently have an opening. In fact, I would have never been able to “brag” about my flexibility that way had I not received from the university CIBER a summer research grant that could at least make my ends meet there.

Prior (1998) has a point here, that access negotiations necessitate a willingness on the part of the researcher to accept the offered interactions, and from there, work up for the way for data collection. In the same token, for all these dilemmas an ethnographer is like to encounter, Mathner and Doucet (1997) suggested to address them this way:

“The best we can do then is to trace and document our data analysis processes, and the choices and decisions we make, so that other researchers and interested parties can see for themselves some of what has been lost and some of what has been gained. We need to document these reflexive processes, not just in general terms such as our class, gender
and ethnic background; but in a more concrete and nitty-gritty way in terms of where, how and why particular decisions are made at particular stages” (p.138).

Furthermore, Luttrell’s advocacy for “good enough” researcher also helped relieve our worries as ethnographers in terms of subjectivity (2005):

“It is possible to be a “good enough” researcher—that is, a person who is aware that she/he has personal stakes and investments in research relationships; who does not shy away from frustrations, anxieties, and disappointments that are part of any relationship; and who seeks to understand (and is able to appreciate) the difference between one’s self and another. The “good enough” researcher tries not to get mixed up between fantasies, projections, and theories of who the “others” are and who they are in their own right. “Good enough” researchers accept rather than defend against healthy tensions in fieldwork. And they accept the mistakes they make—errors often made because of their blind spots and the intensity of their social, emotional, and intellectual involvement in and with the subject(s) of their research. These mistakes can be compensated for by the many times that they will do it right” (p.264).

Finally, Luttrell’s view of conducting reflexive ethnography resonates and speaks for my own philosophy of seeing the world and my life, as well as my motivation in proposing a new theorizing of globalization and organization (2005):

“I think of being reflexive as an exercise in sustaining multiple and sometimes opposing emotions, keeping alive contradictory ways of theorizing the world, and seeking compatibility, not necessarily consensus. Being reflexive means expanding rather than narrowing the psychic, social, cultural, and political fields of analysis” (p.264).

I had been trying to be flexible from the beginning, ready to revise or discard initial research questions and adjust data collection procedures as I progressed myself physically,
socially and institutionally in the research site (Gaskins, Miller, & Corsaro, 1992). As Miller, Hengst, and Wang (2003) summarized:

“Ethnographic research involves taking up a rigorous program of scientific inquiry marked by repeated and varied observations and data collection; detailed recordings of, and reactions to, such observations; a skeptical stance by the researcher that forces as many questions from the continuous interpretation of the data as it provides answers; and the presentation of ongoing interpretations to the larger scientific community” (p.222-223).

2.4 The Research Context—Value Proposition in Industries of Pharmaceuticals and CRO

Due to the facts that the regulation standards slightly vary by country and that the United States represents the largest global pharmaceutical market (IMS Health, 2010c), I mainly describe here the pharmaceutical production framework adopted by the U.S. Food and Drug Administration (FDA), which is also where my research context is framed. FDA governs pharmaceutical companies from all over the world who intend to market or are marketing their products in the US in light of the safety and efficacy standards.

Figure 1 is an illustration of the new drug development process provided by FDA on its official website (U.S. Food and Drug Administration, 1998). According to this graph, the development process is generally divided by two parts: pre-clinical research and clinical studies.
In pre-clinical research phase, a drug candidate is found through synthesis and purification, where hundreds or thousands of chemical compounds are formulated and screened through test tube experiments, or else called assays. Then two or more animal species (one rodent, one non-rodent) are used in the animal testing to measure how much of the drug is absorbed into the blood (Absorption), how it is broken down chemically in the body (Distribution), the toxicity of the drug and its breakdown products (Metabolism), and how quickly the drug and its metabolites are excreted from the body (Excretion)--ADME. The
information collected from the above measures is called Drug Metabolism and Pharmacokinetics (DMPK) data. Depending on the proposed use of the drug, the testing could be short-term, ranging from 2 weeks to 3 month; or long-term, from a few weeks to several years. Some animal testing continues after human tests begin to learn whether long-term use of a drug may cause cancer or birth defects. After animal testing is done, pre-clinical research is finished.

The data gained from pre-clinical research provide information on the efficacy, toxicity, stability, and dosage forms of the drug candidate. This helps the drug development sponsor decide whether or not to go forward with the development of the compound and then model the dose to be used in clinical studies. If the decision is yes, the sponsor company submits the Investigational New Drug (IND) application to FDA, to request the permit to advance to the clinical studies research phase.

In addition to allowing carrying out clinical studies, the approval of IND also exempts the sponsor from the Federal law that prohibits the drug from being transported or distributed across state lines before its final marketing approval. Therefore, the drug company may ship the investigational drugs to clinical investigators in many states or even crossing national borders for the sake of cost-saving. This provides opportunities for outsourcing and/or offshoring.

If the compound has been studied or marketed previously, new preclinical studies are not necessary. However, the sponsor has to show the evidence to support the safety of administering the compound to humans in two other ways. The first is to compile existing nonclinical data from past lab assays or animal studies on the compound. The second is collecting data from previous clinical testing or marketing of the drug in the United States or another country whose population is relevant to the U. S. population.
In June 1998, FDA issued a Guidance for Industry called “E5 - Ethnic Factors in the Acceptability of Foreign Clinical Data” (U.S. Food and Drug Administration, 2009a), endorsed by the International Conference on Harmonisation (ICH). On the official website for ICH, it says: “The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) is a unique project that brings together the regulatory authorities of Europe, Japan and the United States and experts from the pharmaceutical industry in the three regions to discuss scientific and technical aspects of product registration. The purpose is to make recommendations on ways to achieve greater harmonisation in the interpretation and application of technical guidelines and requirements for product registration in order to reduce or obviate the need to duplicate the testing carried out during the research and development of new medicines. The objective of such harmonisation is a more economical use of human, animal and material resources, and the elimination of unnecessary delay in the global development and availability of new medicines whilst maintaining safeguards on quality, safety and efficacy, and regulatory obligations to protect public health” (International Conference on Harmonisation, 2010). Simply speaking, these all point to the issue of efficiency.

*ICH E5* recommends a framework for evaluating the impact of ethnic factors on a drug’s effect, to facilitate the registration of drugs and biologics across ICH regions. However, in general, FDA's guidance documents, including this one, do not establish legally enforceable responsibilities. They merely describe FDA's current thinking on a topic and are viewed only as recommendations, unless specific regulatory or statutory requirements are cited. In other words, the actual conduction of drug development and the actual approval of the drug are at the discretion of the sponsor company and the FDA, respectively.
Therefore substituting preclinical and/or clinical data with those from another country or countries is a gray area in FDA’s regulation. Here leaves room for pharmaceutical companies to take advantage of the global market to seek locations where research can be done in a more cost-effective way than in the United States.

Back to the drug development process, if the sponsor hears nothing from FDA, until the 31st day after its submission of the IND, by default FDA approves the application. The drug sponsor embarks on the clinical studies, which includes three phases.

Phase 1 studies evaluate the safety and pharmacokinetics of the drug in human, which are usually performed in 20-80 healthy volunteers. Then, a few dozen to about 300 patients with the disease or condition will be used in Phase 2 studies, which are used to give confidence in the effectiveness or efficacy of the drug. After the preliminary evidence suggesting the drug is effective, Phase 3 studies will be performed to gather the additional information varied by different populations and different dosages and using the drug in combination with other drugs—drug interaction. The number of subjects in this phase usually ranges from several hundred to about 3,000 people. Phase 3 studies evaluate the overall benefit-risk relationship of the drug and provide the basis for extrapolating the results to the general population and transmitting that information in the physician labeling.

Upon completion of clinical studies, the drug sponsor compiles data and submits the New Drug Application (NDA), in which the sponsor company formally proposes that the FDA approve its new pharmaceutical drug for sale and marketing in the United States.

NDA has evolved since the Food, Drug, and Cosmetic Act (FD&C Act) was passed in 1938. At that time, the drug safety was the only requirement to justify its commercialization in the U.S. market. In 1962, the Kefauver-Harris Amendments to the FD&C Act added into the
processing of NDA the requirement for drug efficacy. It also enforced that the established benefits of the drug outweighed its known risks. This change to the FD&C Act represents the genesis of international standards and regulations for pharmaceutical and medical device product approval (Nichol, 2006). Ever since, commercial pharmaceutical product developers have started to perform regulation-driven product development. However, this function had been kept internal until 1975, when the first commercial entity was formed in the United States to provide contracting services, signifying the beginning of the modern Contract Research Organization (CRO) industry (Nichol, 2006).

The CRO industry provides the services aligned with each step of the pharmaceutical production. Those services usually are grouped into five categories. Some companies specialize in one or several of them, while some others have covered the full range of capacities and capabilities, namely a full-service CROs (Gad, 2003).

(1) Nonclinical biological testing:
Pharmacology
Biocompatibility
In vitro screening
Toxicology
Metabolism
Pharmacokinetic modeling

(2) Chemistry
Medicinal chemistry
Synthesis
Active pharmaceutical ingredient (API) manufacture
Radiolabeled synthesis
Analytical method development/analysis
Bioanalytical method development/analysis
Biological product manufacturers
(3) Engineering
   Machine shops
   Physical testing

(4) Clinical
   Phase I centers
   Clinical monitors
   Statistical analysis
   Site management organizations (SMOs)
   Report writing services
   Data management

(5) Dosage forms
   Formulation development
   Clinical test material (CTM) manufactures
   Labeling
   Patient kit preparations
   Pharmacy services
   Contract sterilization

(6) Regulatory
   IND preparation
   NDA preparation
   Annual update preparation
   Regulatory advisory

In 1985, NDA was further restructured to be more organized to expedite FDA review.

Research information is categorized into the following 15 sections:

- Index;
- Summary;
- Chemistry, Manufacturing, and Control;
- Samples, Methods Validation Package, and Labeling;
- Nonclinical Pharmacology and Toxicology;
- Human Pharmacokinetics and Bioavailability;
- Microbiology (for anti-microbial drugs only);
- Clinical Data;
- Safety Update Report (typically submitted 120 days after the NDA’s submission);
- Statistical; Case Report Tabulations;
- Case Report Forms;
- Patent Information;
- Patent Certification;
- Other Information.

In addition to the safety and efficacy data enforced in NDA, FDA also reviews the statement proposed for drug labeling and inspects the sponsor company’s manufacturing facilities and clinical trial sites. This process, though, lays potential challenges for the functioning and operation of FDA physically, culturally and politically, especially when the manufacturing and clinical trials are outsourced beyond the US border.

From test tube drug inception to the approval of NDA, the whole drug development process generally takes about eight and a half years according to FDA’s estimate, and costs about $250-$800 million (Gad, 2003). These estimates mainly say to the development of an innovator drug product which is usually under patent protection or certain exclusivity.

For a generic drug product, which is comparable to an innovator drug product (also known as the Reference Listed Drug (RLD), first approved version of the drug product marketed under a brand name) in dosage from, strength, route of administration, quality, performance characteristics and intended use, the sponsor company requests its marketing approval from FDA through submitting the Abbreviated New Drug Application (ANDA) or Abbreviated Antibiotic Drug Application (AADA) instead of NDA.
Generic drug applications are termed “abbreviated” in that they are not required to provide new clinical data to prove safety and efficacy, since these parameters have already been established by the approval of the corresponding innovator drug product. Therefore, usually both the cost and price of the generic drug are much lower than its brand name counterpart. However, the approval of the ANDA or AADA allows the sponsor company to manufacture and market the generic drug product only after all patent protection and exclusivity associated with the RLD have expired.

The early 1980s had witnessed the steady growth in the demands for regulatory data, while pharmaceutical companies were being trapped by the lack of efficient capacity management. It has been getting more and more difficult to leverage between building manufacturing infrastructure and meeting production peaks in terms of time/resource allocation (Easton, 2006). In the last ten years, pharmaceutical sales growth has generally slowed while growth rates in R&D cost have been maintained or increased. Now it is widely acknowledged that, to drive new levels of productivity and deliver future values to investors, the pharmaceutical industry in general must reduce development costs by 30-40 percent while at the same time significantly shortening the development cycle time (Easton, 2006).
CHAPTER 3: UNDERSTANDING THE FIRM

This chapter is designed to answer research question set 1: What embodies the uniqueness of the contemporary international SMEs and transnational entrepreneurship in the outsourcing sector of the US-based global pharmaceutical? How does that uniqueness sustain competitive advantage? What are the innovations and controversies characteristic of the contemporary globalization that are associated with that uniqueness? It also partially answers research question set 2 regarding-- Who comprises the social network of the international SME and transnational entrepreneurship in my research context – a Chinese-American-run multinational Contract Research Organization in the outsourcing sector of the US-based global pharmaceutical industry; and how does the network-based mechanism function to coordinate and integrate resources from inside and outside of this firm.

3.1 The History of the Enterprise and the Entrepreneur

The CRO company I look at in my research is called Leading Edge, Inc. On its corporate website, there is a section called “History/Leadership.” It says,

“Leading Edge was founded by Dr. Sam Liu in 2001 with the ambition of becoming one of the best client-oriented, contract research companies in the industry. Dr. Liu was known to always provide technical help to his friends and colleagues who were faced with complex analytical issues. With the passion to aide others in troubleshooting development issues and frustration with the level of expertise available to perform outsourced analytical projects that he was running at Wyeth Pharmaceuticals’ ESI Lederle division, Dr. Liu felt compelled to start Leading Edge.

Dr. Liu has beaten many odds to start and grow the company. Growing up as a farmer’s son in a remote village in the People’s Republic of China, Dr. Liu was the first person to
receive a B.S. degree in the history of his hometown district with a population of more than 100,000. He made the most of his studies and had the opportunity to receive his doctorate education at McGill University in Montreal, Canada. Based on his post-doctorate studies in analytical chemistry and chiral compound analysis, Dr. Liu was hired by Great Valley Pharmaceuticals and was brought to the US to start his career in the pharmaceutical industry. He has since been recognized as a leader in analytical and bioanalytical research, and the insights gained in these areas have helped Dr. Liu to build the successful venture Leading Edge is today.

Leading Edge has brought on board many successful technical and business leaders from the pharmaceutical and biotech community as it has expanded its reach into additional service areas. Leading Edge’s corporate mission is to become one of the best CROs in the world by providing the best service possible, using the best technical know-how at a reasonable value, to enable our clients to develop life-saving medications.”

Before looking at anything else, the description of the history of the company at least points out three things. The first, Sam’s motivation to become an entrepreneur was more or less a result of choice out of no choice after being laid off by Wyeth. This confirms with Burt’s strategy hypothesis of structural holes in social relations where entrepreneurship is proposed to be the social and emotional residue of an individual player navigating around constrained relations to manage the loss of control (R. S. Burt, 1992). Entrepreneurial behavior is a reflection of the evolutionary necessity of self-organization. The second, at least two factors are identified as essential to Leading Edge’s existence and growth so far: Sam’s technical expertise and leadership and his recruitment and mobilization of other specialists in the industrial community. This is also in accordance with the fact that, “an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organization didn't previously have” (Simon, 1991, p. 125). Thirdly, one of the attributes of successful
international SMEs is described as the adaptation of a global mindset by the management who views the world as the firm’s marketplace, thereby implanting a culture of international business (Autio et al., 2000; Knight & Cavusgil, 2004; Knight & Kim, 2009). This is manifested by Leading Edge’s corporate mission to become one of the best CROs in the world.

First incorporated in the state of New Jersey in April of 2001, Leading Edge did not function until 2002—the same year when Baxter Healthcare Corporation completed the acquisition of the ESI Lederle division from Wyeth, where Sam was laid off.

Over the past ten years, Leading Edge has been through fast growth and expansion in terms of service capabilities, locations and revenue. It moved to Malvern, Pennsylvania in July 2004. According to the Establishment Inspection Report for the inspection conducted at Leading Edge in January 2004 by FDA, by then the services provided by the company included pharmaceutical analysis (i.e., method development, validation and training), bioequivalence testing on serum and urine, formulation development and organic synthesis (i.e., synthesis of small molecules for chemicals). In 2006, it opened its first international branch in Shanghai, China. In June 2008, the year when I first arrived at Leading Edge, it finalized the acquisition of RBA, a 14-year-old full-service, Phase I-IV global clinical research company headquartered in Princeton, N.J. with affiliated offices in the United Kingdom, France and Germany. Leading Edge’s services thereafter expanded into the following categories:

- ADME services
- Analytical services
- Active pharmaceutical ingredient (API) / organic synthesis
- Bioanalytical / DMPK services
- Biomarker research
- Current good manufacturing practices (cGMP) manufacturing
- Preclinical research
- Product development
- Regulatory affairs
- Phase I-II study performance
- International Phase II-IV CRO services

In the same year, Leading Edge opened another office in Exton, Pennsylvania, a place 20 minutes away from Malvern. In the summer 2009, the second time I visited this company, its headquarters already moved to a new location in Exton, 10 minutes’ drive each from their Malvern office and their first Exton office. At the same time, they also started their clinical services in Beijing China. As of now in April 2011, according to its corporate website, their services have been further streamlined as below:

Preclinical Services
- GLP toxicology studies
- In-house capabilities for *in vitro* ADME studies
- *In vitro* metabolism and identification
- Pharmacokinetic studies
- Safety pharmacology
- Scientific and regulatory affairs

Bioanalytical Services
- LC/MS/MS and GC/MS method development and validation
- Clinical Biomarker and immunogenicity
- Biomarker assay development and validation
- Pharmacokinetic/pharmacodynamic evaluations
- Streamlined sample management and processing
- Scientific and regulatory affairs

CMC Services
- GMP analytical services, including method development and validation
- Finished product development – immediate and controlled release formulations
- GMP clinical materials manufacturing – non-sterile and sterile forms
• GMP API manufacture/organic synthesis of reference standards
• ICH stability storage and testing services
• Unknown impurities identification
• Experienced technical transfer services, scientific and regulatory affairs

Clinical Services
• Phase I-IIa, 72-bed CRU located in the metro New York City area
• Bioequivalence, bioavailability, PK/PD evaluations
• Data management
• Statistical analyses
• Medical writing
• Patient recruitment
• Clinical pharmacology consultation, scientific and regulatory affairs

In addition, their expansion has been continued both in the US and in China. And each office within either country has been assigned a service focus aligned with the above service categories.

See Figure 2 below.
Figure 2: Leading Edge’s Operation and Offices in the US and in China

(Source: Leading Edge’s Website)

<table>
<thead>
<tr>
<th>Location</th>
<th>Services/Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hackensack, NJ (NYC area)</td>
<td>Phase I-II Clinical Operations (72 beds) – expanding to 160 beds in 2010</td>
</tr>
<tr>
<td>Princeton, NJ</td>
<td>CRO support services</td>
</tr>
<tr>
<td>Malvern, PA (near Philadelphia)</td>
<td>Bioanalytical and Bioassay services, ADME services GMP API manufacturing</td>
</tr>
<tr>
<td>Exton, PA (near Philadelphia)</td>
<td>Corporate Headquarters Pharmaceutical Analysis, Formulation Development and GMP CTM Manufacturing</td>
</tr>
<tr>
<td>Shanghai, China</td>
<td>Bioanalytical and Bioassay services, Pharmaceutical Analysis and Formulations Development</td>
</tr>
<tr>
<td>Zhengzhou, China</td>
<td>Phase I Clinical Operations (130 Beds)</td>
</tr>
<tr>
<td>Beijing, China</td>
<td>Clinical Services and Regulatory Affairs, Future home of Formulation Development Beijing Pharmaceuticals Manufacturing Site</td>
</tr>
<tr>
<td>Alliances with GLP Preclinical</td>
<td>Preclinical Research centers – rodents, canines and non-human primates</td>
</tr>
<tr>
<td>Centers in the US, Shanghai &amp; Suzhou, China</td>
<td></td>
</tr>
</tbody>
</table>

Since 2006, Leading Edge has been consecutively listed on the top 100 fastest growing privately held companies in Greater Philadelphia, according to an annual survey project conducted by the Entrepreneurs' Forum of Greater Philadelphia, Philadelphia Business Journal and University of Pennsylvania Wharton Small Business Development Center (Philadelphia 100, 2009). Its growing pattern by revenue and employees are summarized in Table 1.
So far, Leading Edge has served more than 200 clients around the world, especially those from the US, European Union, Japan, and China. These clients cover global top 10 big pharmaceutical companies, as well as other small and medium-sized or virtual pharmaceutical and biotech firms. The company also has a special focus to serve the Chinese generic and innovative drug companies. By looking at all these criteria mentioned above, we may fairly define Leading Edge as a successful international SME.

### 3.2 The Uniqueness behind the Success

This section identifies and discusses the uniqueness in the organizing dynamics—the communication and production activities at Leading Edge, and how its competitive advantages are shaped and sustained. It also leads to the broader discussion of the innovations and controversies in the nature of the international SME and transnational entrepreneurship in the contemporary discourse of globalization.

#### 3.2.1 The Invisible Rules for People to Come and to Go
Penrose (2009) holds that, “a working relationship between particular individuals making decisions and taking action in a particular environment” (p. 42) shaped by shared cultures, shared experiences or shared understandings (Quinn, 2005b), determines “the efficiency and confidence with which action can be taken by the group as a whole” (Penrose, 2009, p. 42) in the integration of resources and transfer of knowledge (Grant, 1996). Looking at the co-founders of Leading Edge can best illustrate this point. In addition to Sam, there are another two co-founders of the firm: Ray and Charlie.

Ray is a White American. He used to work in the same division as Sam at Wyeth, where they got laid off around the same time. It was said that there were also at least three other employees at Leading Edge who were former colleagues of Sam’s at Wyeth including Indian and Philippian nationals. Sam invited them to join him when he founded his own company. The other co-founders, Charlie, is Chinese National. From this I notice that, in Sam’s hiring strategy, he particularly pursues people who had certain working relationships with him, who he knew before, and more importantly he can trust. This kind of trust derived from previous relationships or shared background can help smooth the transfer of knowledge and integration of resources held by those individual employees, especially their tacit knowledge and intangible resources, so that the company’s organizing and producing efficiency is increased.

According to the company’s email list in 2008, there were 97 employees. By reading the names, I found 51 of them were Chinese (including Taiwanese), 24 American natives, 12 Indians, with the rest from other Asian countries. The fact that the majority of the workforce at Leading Edge has their origins in Asia, especially in China, might speak to the shared background in terms of experience, culture and history, in facilitating the knowledge transfer and resource coordination and integration in the daily operation of this company.
Several people there told me at different occasions that, they got paid the same as the industry rate. Therefore, the theory of cheap labor from the third world countries may not apply to the contemporary Chinese immigrant entrepreneurship in the outsourcing sector of the US-based global pharmaceutical industry, such as Leading Edge.

In addition to mobilizing social relations with colleagues and schoolmates, Leading Edge also has a fairly large amount of employees who are from Sam’s hometown, Henan Province. For example, as I mentioned in my entry story, my professor Dr. Han, hired as a consultant by Sam, who introduced me to Leading Edge, is from Henan. This could be called as one of the idiosyncrasies shaped by the historical conditions, causal relationships, social complexity and specific circumstances uniquely associated with Sam’s life (Barney, 1991; Demsetz, 1973; Mahoney, 1995; Powell, 1992). In fact, we should not find it surprising, since Sam particularly mentioned his background in the history of his company that he “was the first person to receive a B.S. degree in the history of his hometown district with a population of more than 100,000.” It seems to me that there is some personal emotion attached to his hometown as well as people from his hometown, to whom he would like to lend the favor in form of job opportunities.

This kind of personal favor that is rooted in Sam’s life history as an entrepreneur, however, may be easily mistaken at another occasion—the recruitment of interns. During my first summer at Leading Edge in 2008, besides me, there were four other interns—Joyce, Lucy, Don and Cary. Joyce was a senior at Tufts University double-majored in Biology and Music and was preparing to go to medical school then. She is also Yolanda’s daughter. They were my host family in 2008. Lucy was a student at the University of California at Berkley. She is also the daughter of another lab scientist at Leading Edge. Don was a senior in Biochemistry at University of Pennsylvania. His Dad is a friend of one of the management members here. Cary
was a doctoral student in Chemistry at the University of Missouri at Columbia. His professor
also knew someone in the management team. What’s in common among these interns is that, our
educational backgrounds were surprisingly attractive.

Lucy was also one of the interns at Leading Edge one year earlier. It was said that last
year the interns did the company a huge favor in providing assistance during the peak season.
Compared to the previous year, the summer of 2008 was much easier a job for the interns.
Consequently, during the top management meeting in June 2008, Sam reacted to this issue. In his
memo to other members of the management team, he said, “we must keep summer intern
business (performing or making contributions). Payment must follow exactly my previous
direction. All interns must leave by July 31. No summer intern in the summer of 2009.”

On the first day I arrived in Pennsylvania, Yolanda and Joyce drove to pick me up at the
airport. On the way to their house, they were discussing about how the recruiting of the interns at
Leading Edge were all guanxi-based or relationship-based. In other words, in their opinions, it
was unprofessional or irrational. Moreover, on the first day of work, when I had lunch together
with other colleagues in the dining room, the first question most people greeted me with always
centered around who introduced me to the company. Later on, I realized this question had been a
routine to ask all the newcomers of this company.

At first, I had the impression that having interns referred by the company’s connections
or employees was a one-way favor given by Sam to maintain good relationships with his friends
and colleagues. But in fact, this has been a highly rational decision-making process, considering
the educational backgrounds of those interns and Sam’s calculation in the meeting memo, as well
as the image he established himself among the employees a merciful and accommodating boss
by doing this.
Sam’s true motivation in his tacit strategy of hiring interns was further manifested in the summer of 2009, the year when he previously said would not have interns. As I have mentioned in my second entry story, I was a special case. But I was not the only exception to Sam’s memo in 2008. There were another two—Nathan and Ben.

Nathan was a Biochemical Engineering major at Northwestern University. He is the nephew of the Vice President of a top global pharmaceutical company, a major client of Leading Edge’s branch in China. Ben was studying Biochemistry at Duke University. He is the son of Howard—the head of the Bioanalytical services—the oldest and most profitable division at Leading Edge. When asked why Ben came to intern at Leading Edge this year, Howard simply answered that his wife, Amy, a director at Sanofi, another big pharmaceutical company, did not succeed in finding the son an intern position at her company. Howard’s response was so spontaneous that he seemed not to realize what Sam said in their meeting one year ago.

In addition to pursuing talents with shared background to smooth the operation of his company, Sam is also very attracted to experienced industry practitioners who can bring their technical expertise and management experience and put them into effect right upon their arrival to help strengthen or expand his company. To certain extent, this is also determined by the service nature of the CRO industry. Over the past ten years, the global pharmaceutical industry has been through several major transformation and integration through merger and acquisition. To many industry professionals, this often means the loss of job. However, they are still very competitive considering the growing needs of experienced labor force in the pharmaceutical CRO industry. Companies within this industry are competing for them.

Sam’s strategy in this competition is to give the newly-hired managers attractive titles such as senior vice president or vice president. By August 2008, at Leading Edge’s US labs alone
(Malvern and Exton), not including the newly acquired clinical company, there were 97 employees. Among them, 5 were senior VPs and 6 were VPs. By June 2008, the organizational chart at Leading Edge looked as in Figure 3.
Figure 3: Leading Edge Organizational Chart in June 2008
In my 2008 assignment, I directly worked with Sherry, the VP of Quality Assurance and Regulatory Affairs. She joined the company in February 2008. She confirmed that the title of VP was attractive to her in considering the job offer, as it might make a difference in her future career. When she left the company later that year, she was hired as a consultant by another company where her salary was doubled. Tony, the VP of Preclinical Services, joined the company in the summer around the same time as mine. One year later, he left the company and became the Director of Preclinical Safety, sanofi-aventis, R&D China, Shanghai—one of the top global pharmaceutical companies—indeed an even better career opportunity.

The year of 2008 witnessed Leading Edge’s fastest expansion in terms of locations and employees, upon the arriving of financial support from a group of private equity investors. During that year alone, Sam brought in four new hires into the top management team. They were Tina, Senior VP of CMC; Tony, VP of Preclinical Services; Sherry, VP of Quality Assurance and Regulatory Affairs, and Victor, VP of Sales, as shown in Figure 3. However, Sam fired all of them by the summer of 2009, because their performances were not perceived by Sam as satisfactory.

But I suspect, when the firing happened in such a consistent and collective way, Sam should at least assume part of the responsibility. For example, it could be partly due to the lack of trust between Sam and the new hires and the differences in their beliefs in management practices. As aforementioned, Sam had high expectation from these new hires in terms of the speed and volume of quality results, even though he himself might not necessarily have relevant expertise to evaluate the performances of those new hires. Purportedly, Sam wanted to and trust and rely on them; but psychologically, his trust was
restricted by his fear of losing control due to the many uncertainties associated with the import of external expertise. Moreover, as there was no formal Human Resource function within this company, training or personal career development was not the right concept that matched the growth needs of this company, even though no one would openly admit it.

For example, Sherry’s expertise lay in quality assurance and quality control. But when she entered the company, Sam also assigned her to be in charge of the newly formed function of regulatory affairs. Besides me—an intern, there were only two other colleagues supporting Sherry in that function. What happened was that, Sherry had to learn this area from the scratch. But Sam did not express any encouragement or appreciation, when our team struggled and managed to finish our first ANDA filing project for a client in China. Even though Sam himself also did not have experiences in this area, he judged the result as unsatisfactory which pissed off everyone in our team, especially Sherry.

The reasons for Sam’s prejudice could be as follows. First of all, this service area was not as profitable as other areas. Especially for our first project, there were many things that needed to be established from the scratch. But once a system is established, projects could be handled much more efficiently from then on. However, if the investment to establish the system was only counted toward the cost of the first project, that project obviously did not seem to be very cost-effective. But that was how Sam did the calculation and evaluated Sherry’s performance and value.

The lack of a formal rule on management travel expense also caused another confrontation between Sam and Sherry. As Sherry used to work for a big pharmaceutical
company, holding a management-level position, she always booked first class when she
did business travel. However, at Leading Edge, there were no formal rules indicating that.
But Sherry heard that Sam used to fly first class. So she also booked the first class for her
first business travel at Leading Edge to China and brought the receipt to Sam for his
signature for reimbursement. Sam was furious about that, saying that all the management
team at Leading Edge only flew economy class. As for the time he himself flew first class,
it was due that he had a medical condition. What Sam implied was that Sherry was not
considerate in using company’s resources.

Regarding some management practice, communication style is also a problem.
Sherry was coordinating a project to redesign the marketing materials for the company,
which needed the input from all other divisions as well as the management team. To
make sure the project go smoothly and timely, Sherry devised the timeline and scheduled
milestone meetings to address issues efficiently through face-to-face communication.
Upon hearing the plan, Sam came to blame Sherry that, “each division head’s time is
very expensive. Having so many managers attending your meeting is too costly and not
necessary.” Obviously, the mutual trust respect between Sam and Sherry had been
severely damaged.

Certainly, Sherry was not alone. I also detected Leading Edge’s distrust toward Dr.
Han. As I was introduced by Dr. Han to this company and thought I would work with
him during my internship, at the beginning several weeks, I maintained regular
communication with Dr. Han, briefing him on what I had been involved with. I also
shared Dr. Han’s feedback with the management team I directly worked with here at
Leading Edge, so that everyone could be on the same page. But in fact, even though they
hired him as a consultant, the management team did not really see Dr. Han as an insider. They were too cautious to trust Dr. Han who was simultaneously the VP of Tasly in China, a company that was engaged with completely different business from that at Leading Edge. Tony, the VP of Preclinical Services, reported to Charlie, the senior VP in his division. As Tony did not have any assistants at this company, he often asked help from me. At that time, they were working on the establishment of the clinical center in Zhengzhou, Henan Province, China. Tony asked me to edit and proofread the proposal he wrote for that project. In my regular report, I told Dr. Han about that. Charlie got furious about this, saying that this was business intelligence, which should not be shared with others. At first, I felt really confused, as one boss told me that the other boss who got me into this company was an outsider who I should not share our business intelligence with. This is in contrast to my earlier description of my communication with Dr. Han where he used “us” to refer to his relationship with Leading Edge when he was helping the company recruit me.

This relative low level of trust for the new-hired management-level employees was further confirmed by Sam. During the ANDA filing project Sherry was in charge of, the newly-hired expert in our four-man team was leaving due to some disagreement with Sam on some operation issues of this company. Facing the lack of staff and expertise, Sherry asked Sam if we should ask help from Dr. Han, as he used to work for FDA. Sam said no and commented that Dr. Han was a person who only liked to get paid but did not perform.

When Sherry joined the company, her role was sort of overlapping with Emmy, the original director of Quality Assurance. After Sherry was laid off by Sam, she
commented that, “to curtail the headcounts to control budget, Sam could choose to save me or Emmy. But he eventually chose Emmy; it’s probably because Emmy is the one who has followed him from Wyeth.”

People such as Sherry and Tony, with their technical experiences and managerial resources in the industry, are all highly valued by other companies after they left Leading Edge. These new hires’ incompatibility with this company may have something to do with Sam’s management competence in terms of motivating and cultivating the resources from his employees, especially specialists brought from outside. This observation actually confirms Penrose’s argument of a working relationship between the entrepreneur and the employees critical to the efficiency to a firm’s knowledge transfer and resource integration as mentioned earlier (Penrose, 2009). She summarizes,

“It is for this reason that it is impossible for a firm to expand efficiently beyond a certain point merely by drawing up a management ‘blueprint’ for an extensive organization and then proceeding to hire people to fill the various positions and carry out the functions laid down in detailed ‘job descriptions’… Extensive planning requires the cooperation of many individuals who have confidence in each other, and this, in general, requires knowledge of each other… If a firm deliberately or inadvertently expands its organization more rapidly than the individuals in the expanding organization can obtain the experience with each other and with the firm that is necessary for the effective operation of the group, the efficiency of the firm will suffer, even if optimum adjustments are made in the administrative structure; in extreme cases this may lead to such disorganization that the firm will be unable to compete efficiently in the market with other firms, and a period of ‘stagnation’ may follow… Since the services from ‘inherited’ managerial resources control the amount of new managerial resources that can be absorbed, they create a fundamental and inescapable limit to the amount of expansion a firm can undertake at any time” (p.42~44).
3.2.2 Financial Crisis

Following the peak of the collapse of the housing bubble, the first signal to this global financial crisis was sent by the US Federal Home Loan Mortgage Corporation (Freddie Mac). The corporation announced on February 27, 2007, that it would no longer buy the most risky subprime mortgages and mortgage-related securities (Federal Reserve Bank of St. Louis, 2010). The impact of this financial crisis started to be strongly felt by the general public around the globe when several of the major US-based global financial institutions were facing the fate of disappearing or fundamental restructuring in 2008 (see Table 2).

<table>
<thead>
<tr>
<th>September 7</th>
<th>Government seized Fannie Mae, Freddie Mac</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 14</td>
<td>Bank of America said it would buy Merrill Lynch for $29 a share</td>
</tr>
<tr>
<td>September 15</td>
<td>Lehman Brothers filed for bankruptcy</td>
</tr>
<tr>
<td>September 16</td>
<td>Government announced $85 Billion emergency loan to rescue AIG</td>
</tr>
<tr>
<td>September 21</td>
<td>Goldman Sachs, Morgan Stanley to become bank holding companies</td>
</tr>
</tbody>
</table>

However, it is exactly within the same period when Leading Edge experienced its fastest expansion with the injection of $10 million private equity in April 2008, while investors in the public sectors have tightened their budget as shown in the mass lay-off news from those big pharmaceutical companies. However, the scenario here at Leading Edge is more or less counterintuitive to the two key traditional disadvantages of international SMEs relative to the large firms: 1) access to finance, to which, the recent
The $10 million investment received by Leading Edge in 2008 was provided by Baird Capital Partners Asia (BCPA), Pavilion Capital Partners, existing individual shareholders and members of management. BCPA is the major investor. This China-focused investment group of Baird Private Equity provides growth equity capital to smaller, high-potential companies with substantial operations and growth opportunities in Greater China. It has representative offices in Hong Kong, Beijing, and Shanghai, and invests in three industry sectors: manufactured products, business services and healthcare. Established in March 2008, BCPA is the second phase of Baird Private Equity’s strategic expansion in China, which in 2003 formed a team of now more than 20 operating professionals in China helping more than 15 Baird Private Equity portfolio companies create value through sourcing, manufacturing or distributing in Asia. The investment on Leading Edge was in fact BCPA’s first transaction since its inception.

The parent company-- Baird Private Equity is the global private equity group affiliated with Robert W. Baird & Co. (Baird). It makes venture capital, growth equity and buyout investments in smaller, high potential companies in the United States through Baird Venture Partners and Baird Capital Partners, in Greater China through Baird Capital Partners Asia, and in Europe through Baird Capital Partners Europe and Granville Baird, an affiliated fund manager that invests in Germany.

As for why BCPA got interested in having Leading Edge as their first investing target, they wrote in their press release (Baird Capital Partners Asia, 2008): “Leading Edge’s experienced management team and talented scientific staff have made significant
contributions to large and emerging pharmaceutical companies in drug discovery research, development and commercialization. In 2007, this team’s accomplishments and the Company’s stable growth earned Leading Edge a ranking as one of the top 20 fastest growing companies in the Greater Philadelphia area on the “Philadelphia 100” list published annually by the Philadelphia Business Journal. Today, Leading Edge serves four of the top ten largest pharmaceutical companies in the world.”

Ray, the senior VP of Business Development and Client Services at Leading Edge also confirmed that, “the financial crisis is actually good for our industry, as it gives more reason for the pharmaceutical companies to outsource their production to us, who can handle it more efficiently.”

In addition to this idiosyncratic effects of financial crisis on Leading Edge’s access to finance, the crisis also served as an excuse for company’s firing strategy. Employees like Sherry, whose performance was perceived as not up to the satisfaction of Sam or other management team members, were told to leave because of the budget issue under financial crisis. But in fact, soon after these people left, Leading Edge recruited a similar amount of new employees.

3.2.3 Business Development

The arrival of the investors also posted some challenges for the management of Leading Edge. The investors were not happy with their current marketing practices, such as their company brochures, cooperate website, and the lack of a formal sales team and a competent finance officer.
Lots of the businesses that sustained Leading Edge’s growth before were from the personal connections of the management team because of their previous extensive industrial involvement with R&D and commercialization—the core of the CRO business. Sam had been the major contributor. The broad social connections of other employees also contributed. In fact, the company encourages the regular employees to help generate client leads by rewarding them 10% of the referred transaction.

In my 2009 assignment, I worked closely with Ray, the senior VP of Business Development at the company’s Headquarters in Exton. One day I travelled to the Malvern site to deliver some documents to Howard, the senior VP of Biochemical Services. Howard asked me to bring the message to Ray that, Sanofi was planning to outsource a project, so that Ray could get ready to bid for it. As aforementioned, Howard’s wife, Amy, holds a management position at Sanofi. Through Amy, Leading Edge can get this type of business information in faster and more insightful way than any of its competitors, confirming to Burt’s information benefits of structural holes (R. S. Burt, 1992).

Internationally, Leading Edge’s clinical research center in Zhengzhou, Henan, China, is in fact supported by the First Affiliated Hospital of Zhengzhou University, which is a 4,000 bed hospital. This could not happen without the social resources held by a key member in Leading Edge’s management team—Simon. According to his LinkedIn profile, Simon currently holds two positions: Distinguished Professor at The First Affiliated Hospital of Zhengzhou University and China Clinical Research Director at Leading Edge. Simon joined Leading Edge in 2008, one year before the clinical research
center became operational. Also, Sam and Howard both used to work at Zhengzhou University.

All these idiosyncratic business development strategies confirm with some researcher’s observation that, social clusters of contacts as a form of social capital can provide referral as an endorsement or assurance of an entrepreneur’s personal trust facilitating economic transactions with external parties (R. S. Burt, 1997; Stuart, Hoang, & Hybels, 1999).

However, as Leading Edge’s fast expansion continued, to keep the same growth rate that has attracted the investors, it was suggested by the investors to devise a more formal and more systematic business development (BD) strategy. The investors’ suggestion brought in the VP of Sales, Victor, along with several other regional BD managers in October 2008. According to Victor, the investors are looking at a growth rate of 50% in revenue. As sales, he needs to inflate the number up to 65% in order to meet that goal. This in fact is in accordance with the production trend in the pharmaceutical industry-- to drive new levels of productivity and to deliver future values to investors, the pharmaceutical industry in general must reduce development costs by 30-40 percent while at the same time significantly shortening the development cycle time (Easton, 2006).

One day in 2009, a UPS salesman ran into Sam’s office promoting a new service product. My office booth was right outside of Sam’s office. 15 minutes later, when they were walking out of the office, they both looked happy. It seemed that a deal had been made. Sam commented that, “I wish I have a sales person like you.” This obviously was a signal that Sam was not satisfied with the performance of the current sales team at
Leading Edge. He used to express his philosophy toward business development: Be aggressive toward new client and offer aggressive price at the first time. In this way, we build up relationship with the client and make money in future projects. One day later, consequently, Sam fired Victor, a 20-year sales veteran with record success in the healthcare industry, without giving him any earlier notice. Within several months after that, the managers hired by Victor also left the company as tracked by their LinkedIn profile changes.

3.2.4 Establishing Global Credibility and Legitimacy

The way how BCPA justified their investment on Leading Edge has pointed out three important advantages of this company in establishing its credibility and legitimacy in the pharmaceutical CRO market: the management team, the scientist employees, and the growth rate. The management team has extensive experience in pharmaceutical R&D and commercialization. As for the rest of the labor force at Leading Edge, 60% of them are advanced degree holders. And the majority of them are from China. Facing language and culture disadvantages in the mainstream pharmaceutical companies in the US, this group of highly educated labor force from the third world countries finds their niche at the CRO companies run by immigrant entrepreneurs who can meet their employment needs.

To further elevate their brand equity globally, Leading Edge also devised two other strategies. One day, Charlie came to Sam’s office and proudly announced that, “I only spent $1000, and now our name is listed among the sponsors of the SAPA conference this year.”
The Sino-American Pharmaceutical Professionals Association (SAPA) is an independent and nonprofit Chinese-heritage enduring professional organization in the United States. It was founded in 1993, with over 4,000 members in USA, China, Hong Kong, Taiwan and Japan. Its headquarters is based in the tri-state area (NY-NJ-CT) with three regional chapters in New England, Greater Philadelphia and California bay area. It also has clubs in Shanghai and Nanjing, China, as well as a group of sponsoring cities where the pharmaceutical industry has strategic importance to their local economy. The city where my college is located, Tianjin, is one of such cities.

SAPA mission statement says:

- To promote the advancement of pharmaceutical science and biotechnology;
- To make contributions benefiting public health education;
- To promote scientific exchange and business cooperation between US and China;
- To foster the career growth of pharmaceutical professionals.

Each year SAPA and its regional chapters organize and/or sponsor various kinds of conferences, scientific symposia, seminars, workshops, and social activities, both in the U.S. and in China. Almost all the Fortune Global 500 pharmaceutical companies are involved as corporate sponsors for those events to certain extent. For international SMEs like Leading Edge, being sponsors of SAPA can generate high credibility and exposure to all stakeholders strategically important to the global pharmaceutical markets, especially in the US and China, such as the multinational enterprises (MNEs), investors, and the governments. I will discuss this in detail in chapter 4.

Leading Edge’s collaboration with SAPA was also extended into the Chinese market. Hosting conferences catering to the technical or talent needs of the market there,
not only can establish their credibility and legitimacy, but also make profits by charging conference fees. In 2009, Charlie told me about his idea of cosponsoring a conference with SAPA and asked me to draft a bi-lingual conference information brochure. The final version of brochure read as below:

“SAPA-GP and Leading Edge, Inc. are co-sponsoring a workshop in Zhengzhou China on September 20-21, 2009. The aims of the workshop are to provide educational information about latest U.S. FDA regulatory policies for generic and new drugs approval in order to help Chinese Pharmaceutical companies launch their products in the international market. Workshops will be given by current and previous FDA officials and experienced cross-border industrial practitioners and specialists. They will interact with a wide range of participants such as company executives, policy-makers, and professionals from across the industry, the government, and the academia.

During the workshop, Chinese pharmaceutical companies with international ambition will recruit US-trained professionals with pharmaceutical industry experience who have the intention to work in China. Candidates with experience in Regulatory Affairs, QA, QC, DMPK, CMC, Preclinical or Clinical R&D are highly recommended to meet with the employers at the workshop, or to submit their resumes to Ms. Wang at hwang@leadingedge.com no later than August 15th, 2009.”

Strategies in exploring and organizing resources in its social relations and connections like those discussed above, have obviously helped Leading Edge establish its credibility in the Chinese market. These strategies again have further strengthened its legitimacy in the United State as measured by the investors’ decision-making caliber—the most important success factor of this type of transnational entrepreneur-run international SME.
The coexistence of innovations and controversies in my analysis of the international SME and transnational entrepreneurship follows Nelson and Winter’s (1982b) evolutionary framework that,

“Our point is that analysis of the problem is hindered, not advanced, by the assumption that firms literally maximize profit and industries are in equilibrium, and is advanced when bounded rationality and slow-moving selection are recognized explicitly” (p. 394)

3.3 Summary

In summary, this chapter introduces the history of Leading Edge and its entrepreneurs. I discuss the innovations and controversies in the organizing, communication and production activities that are unique to this type of international SME and transnational entrepreneurship, if not to Leading Edge alone. I also answer the question of how the company gains and sustains its competitive advantages in the global pharmaceutical industry. The analyses focuses on the aspects of hiring/firing strategies, the impact of financial crisis, the practice of business development, and the way how transnational entrepreneurs establish their credibility and legitimacy in both the home and host countries. These aspects all point to an important fact that in structural holes networked in the social ecosystem of the global pharmaceutical industry have helped international SMEs and transnational entrepreneurs, in the adaptation to the resource-constrained environment and in the management of the loss of control as diasporic figures, make idiosyncratically efficient use of existing resources, to create and to enhance their structural autonomy as a survival and growth strategy. Under the resource-based systems approach, in other words, the firm exists to innovatively transform the
gradient between its organization and the environment (the market) caused by inequality regarding access to resources, especially tacit knowledge. As we may see, the normative elements institutionalized in a firm’s operation serve to transform the uncertainty in the microscopic structure of the firm whose meaning is not coherent enough to communicate. This reflects the self-organizing nature of the evolutionary system of the firm to gain efficiency of its organizing dynamics.

However, whether the sustainability of these diasporic figures depends upon the individual attributes of the entrepreneur and thus the organizational characteristics of the enterprise, or the environmental factors such as market demand, remains to be question. This question will be further explored in the following chapters, which discuss the network-based global resource integration in the knowledge transfer and value creation activities of the pharmaceutical production, as well as the individual interpretations from the industrial practitioners. While the analysis in Chapter 3 focuses on the level of organizational, the lenses in Chapter 4 and 5 will be layered across the global, national, communal, familial and individual levels.
CHAPTER 4: SOCIAL NETWORK-BASED GLOBAL RESOURCE INTEGRATION

This chapter will continue to address the issues in research question set 2: Who comprises the social network of the international SME and transnational entrepreneurship in my research context – a Chinese-American-run multinational Contract Research Organization in the outsourcing sector of the US-based global pharmaceutical industry? How does the network-based mechanism function to coordinate and integrate resources from inside and outside of this firm? How do transnational social capital, large multinational enterprises and Chinese state and local governments, each, play a role in the global resource integration and coordination, knowledge flow, and value creation of the pharmaceutical production? The chapter will also open up the discussion on identity building of the diasporic Chinese in my research context, which is central to research question set 3.

In Chapter 3, as one of the vehicles to establish global credibility and legitimacy, I introduced SAPA--a transnational non-profit professional organization, which again will be the focus of this chapter. But first, I will give an in-depth analysis of the evolution of the global pharmaceutical industry under the contemporary economic and political contexts.

4.1 What Is Changing?

One thing very interesting about the economic life of our society is that we often care more about the parameter of growth rate than the specific volume of the growth. The
fact of growing itself would not suffice, unless it is growing faster and faster. This can be usually observed when the gross domestic product (GDP) of a nation, the market size of a certain industry, or the revenue of an organization is cited. However, due to the constraints on world resource, especially natural resource, the issue of sustainability and the public debate on this topic has often ended up with a call for slowing down of production and consumption activities in the human society. Besides that, the world population keeps growing (see Figure 4), even though the growth rate here (see Figure 5) is indeed going downward (U.S. Census Bureau, 2010b; U.S. Census Bureau, 2010c). Maintaining a balanced growth rate that can enhance the overall sustainability of the global society rather than the individual resource-endowed units has always been a challenge to human rationality. It also reflects the holistic paradigm the resource-based systems approach has been calling for, while theorizing of globalization that intersects nations, cultures, histories, business, organizations, and people.
Figure 4: World Population: 1950-2050

![World Population Graph: 1950-2050](image)

Source: U.S. Census Bureau, International Data Base, December 2009 Update.

Figure 5: World Population Growth Rates: 1950-2050

![World Population Growth Rates Graph: 1950-2050](image)

Source: U.S. Census Bureau, International Data Base, December 2009 Update.
From 1999 to 2009, world population grew from 6,008,254,795 to 6,755,987,239 (U.S. Census Bureau, 2010a), with the Compound Annual Growth Rate (CAGR) only at 1.2%. The growth rate of the world aging population (age 65 and above, who tend to consume more healthcare resources), decreased since 2002 from 2.5% to 1.9% in 2008, according to analysis of the World Development Indicators (WDI) database updated by the World Bank. At the same time, the WDI database shows the world crude death rate maintained at 8 per 1,000 people annually. The world average life expectancy at birth increased from 66.37 years for the first five years of last decade to 67.58 years for the second half (United Nations, 2009). Comparing to the historic data back to 1950, this increase was minor (see Figure 6). As for the gross world product (GWP) per capita, the growth rate fluctuated between 0.2% and 2.8% from 1998 to 2008 (see Figure 7), according to WDI. In other words, the improvement of the health status and purchasing power of the world population has been in tune with the growth of the world population. The changes are steady but minor. However, from 1999 to 2009, global pharmaceutical sales increased from $379 billion to $837 billion (IMS Health, 2010c). The CAGR was 8.2%.

These growth rate data imply that, in the last ten years, with the personal income and health condition held constant, on average, each individual somehow spent more and more money on pharmaceutical and medical products. This indicates the decrease of efficiency of the resource organizing dynamics of the human activity system at the global level that relies upon pharmaceutical production as the major self-organizing mechanism.
Figure 6: Five-Year Average of World Life Expectancy at Birth from 1950 to 2010

Figure 7: Comparison of Key Growth Rate Indicators
However, this news pleases little the practitioners of the global pharmaceutical industry, as another measure of growth rate is worrying them. Despite the CAGR of 8.2%, the growth rate of the global pharmaceutical market size decreased from 11.8% in 2001 to 7% in 2009 (IMS Health, 2010a; IMS Health, 2010c) (see Figure 7). IMS Health, the leading market intelligence provider for the global pharmaceutical industry, even expects a global market growth of merely 4-6% in 2010 and forecasts 5-8% annual growth of this industry through 2014 (IMS Health, 2010a). Underneath the surfaces of all the regulatory, industrial, and organizational restructuring, the real change, I believe, is the downward trend of this growth rate along with its perceived loss of control. It is similar to the effect of resource attenuation caused on human behaviors.

4.2 Who Caused the Change— Resource-Based Systems Approach to Globalization

Nevertheless, before contemplating the fundamental causes of this downward trend, the priority of the attention of the whole industry and its related business communities, has often gone directly to the coping strategies as for how to sustain the growing pattern which everybody networked in the system has been used to. To certain extent, that growing pattern has already been embedded in their cultural necessities—what means value.

In my opinion, the changes happening in the global pharmaceutical industry are sub-processes of the evolutionary dynamics of globalization (Nelson & Winter, 1982b). Globalization started as the human history began. It gradually intensifies along the historical river of humanity, as human interaction driven by both the environmental and cultural necessities intensifies globally. The self-organizing nature of global ecosystem
drives the evolution of the global society toward the direction of an optimal structure where its efficiency in organizing resources internal and external is at a maximum.

Borrowing the metaphor from Adam Smith, the self-organizing nature of the global ecosystem and its constituent human activity systems, serves as a universal “invisible hand” (Smith, 2000), governing not only the economic aspect of our society, but also the social, political and cultural life of the global community. When the full span of the history of human civilization is taken into consideration, all of the above aspects of human life integrate and synergize for the ultimate optimization of the conservation, allocation and utilization of world resources, alternatively, the long-term sustainability of humanity (Spencer, 1886). We may indeed observe deviations from this trend now and then, when the history is zoomed into a particular temporal or spatial segment (Parsons, 1951).

As the emergent property of the global ecosystem, the organizing pattern of globalization is dynamic and takes shape as a result of the reproducibility of the microstates. Therefore, the structure represented by globalization at a given time point is subject to perturbation, in the case of human life, the intervention of government and other social agents at either the regional, national or local levels. However, in the long term, the direction of change is toward the attractor.

In an interview conducted by McKinsey, the leading global management consulting company, with Dan Vasella, CEO and chairman of Novartis AG—the No. 3 global pharmaceutical company by its 2009 sales, when asked for the implications of the recent economic crisis for the relationship between business and society, Dan says this:

“…it has been a crisis of leadership. If you had to stop and you would ask yourself, ‘Do I really understand what kind of risks we are running?’”—not
mathematical models on I don’t know what kind of assumptions with thick books—but have to really understand, I think many people would have had to say, “No, I don’t. And I’m running just like everybody else is running.” But that to me is not really responsible behavior…then the greed. So, people say, ‘It’s the greed of managers, greed of investment bankers.’ My view is: maybe. But by which and whose greed was it driven? And then I’m saying, by everybody’s greed. It was the little man. It was the pension fund. It was the investment fund, the portfolio manager. Everybody was running after quick and fast returns…my observation would be, certainly in investment, in banking, the innovation is always, ‘How do I circumvent certain rules to make more and better returns?’ And so this will not stop. It will just be somewhat different. But when one sees huge shadow economies develop and doesn’t do anything about it, you don’t have to be surprised if one day you have a big explosion” (McKinsey & Company, 2009)

Back to the discussion of the fundamental causes of the downward trend of the growth rate for the global pharmaceutical market in the last ten year, I believe the reason lies in the mismatch and imbalance between the economic ambitions of this industry and its related business community and the actual social values this industry has created for the human society, in other words, the value measured the cultural necessities and the value measured by environmental necessities. I therefore predict that the growth rate of this industry will eventually drop to a point where it matches the actual demand of global healthcare—a composite taking into consideration the size of the world population, the world aging population, and the gross world product per capita, and other collectively global and historical parameters, instead of the one calculated by the producers based on their pricing models (see Figure 7).

As the changes in the global pharmaceutical industry are solidifying, the patterns of the reallocation and redistribution of the industry’s global resources can already be
observed toward my predicted direction above, though complicated with controversies. In his account for the opportunities in emerging markets, Dr. Jose V. Sartarelli, the Company Group Chairman, Asia-Pacific/Japan/Latin America at Johnson & Johnson, cites the following points (Sartarelli, 2009):

- 45% of world population
- The rising middle class in emerging markets
- 500 million can afford western medicine (bigger than Europe)
- 12% of world pharmaceutical market and almost 3 times the world growth rate
- CAGR 2008-2013 of 13-16% compared to US CAGR of -1% to -2%
- Account for 1/3 of global pharmaceutical market growth
- By 2025, 50% of new patients in high growth therapeutic areas, such as diabetes and oncology, will come from BRICs

4.3 Where Are the Ruptures — The “Official” Claim

As discussed in the last section of this chapter, in the last ten years, the global pharmaceutical sales growth has generally slowed. However, the growth rates in R&D cost have been maintained or increased. This is also one of the typical growth rate mismatch that most of the business practitioners are more tempted to pay attention to. This is the classic cost-profit duality, when the economic gains and losses of an individual social unit or entity are considered, rather than the globally collective system as a whole—the bounded rationality-based mechanism of satisficing in decision-making.

Now it is widely acknowledged that, to drive new levels of productivity and deliver future values to investors, the pharmaceutical industry in general must reduce development costs by 30-40 percent while at the same time significantly shortening the development cycle time (Easton, 2006). At the actual operational level, such as that at
Leading Edge, the number interpreted by the head of its sales team is 65% as mentioned in Chapter 3.

Moreover, even though accounting for only approximately 11% of the world population, for decades, the developed countries such as the US, Japan and other Western European countries have been contributing to around 70% of total global pharmaceutical sales and been playing a leading role in driving its growth (Sartarelli, 2009). However, in the last ten years, emerging markets such as China keep rising on the ranking of the global pharmaceutical markets. The country is projected to be the third largest pharmaceutical market in 2011 (IMS Health, 2010b), followed by Brazil, Russia and India (see Figure 8). The CAGR of the US pharmaceutical market is 5.2% during 2004-2009 and is forecasted to be around 3-6% during 2009-2014, while the current and projected growth rates for emerging markets as a whole are in double-digit (IMS Health, 2010c).
While I was conducting ethnography in the Greater Philadelphia area in summer 2009, I attended the 17th annual conference of the Sino-American Pharmaceutical Professional Association (SAPA) at Robert Wood Johnson Medical School in Piscataway, New Jersey. In his greeting messages to conference attendees, the SAPA President (2008-2009) and Conference Chair, Dr. Mingde Xia, a western-educated first-generation Chinese immigrant scientist, similar to Sam, who is also a Senior Director in the Corporate Office of Science and Technology at Johnson & Johnson, talked about the
situation the industry had been facing, in a tone of a typical western “mainstream” industry practitioner:

“The pharmaceutical / biotech industry is one of the most research-intensive industries. Today’s pharmaceutical / biotech industry faces unprecedented challenges in the effort to improve productivity and strengthen the product pipeline. Current blockbuster revenues are seriously threatened by patent expiration, regulatory hurdles, increasing competition, reduced R&D efficiency, and drug price pressure. The economic crisis is adding another layer of complexity to an already challenging market environment. Companies need to re-evaluate their strategies and tactics, re-organize their business models, quickly pursue opportunities in emerging markets, and further strengthen the value proposition of their medicines in ways that resonate with payers and patients. The tradition ‘do-it-all, own-it-all’ approach is changing and new partnerships among big pharma (big pharmaceutical company), biotech, academic and venture capital communities are becoming more and more important. Western pharma companies are giving Asian partners more responsibilities than they ever imagined. Innovation and globalization have become the key frameworks of corporate strategy…”

As Dr. Xia says, pharmaceutical industry is research-intensive. The other side of this story implies that high-risk investment is essential to leverage the uncertainty of success and the high cost of failure potential to happen anytime during the lengthy process of drug development under the traditional attrition-based R&D model described in Chapter 2.

Out of all the “official” claims from the industry itself regarding the causes to the slowed industrial growth, I have pinned down three major changes that I think have fundamentally ruptured the status quo.
4.3.1 Patent Expiration

The first is patent expiration. Pharmaceutical companies submit patent fillings to the U.S. Patent and Trademark Office at the beginning of the drug development process. This will protect the patent holders from competition for 20 years from the date the patent is submitted or for 17 years from the date the patent is issued. As it usually takes around 8 years to get marketing approval, a patent protected drug has approximately 12 years of usable marketing protection. During the protection time the patent holder has nearly monopoly power in the pricing of the protected drug which is often charged with the highest possible price (U.S. Food and Drug Administration, 2009b).

In 2011 and 2012, patent expiries will peak in the US market where 6 of nowadays’ 10 largest brand name drugs are expected to face competition from generic drug makers. In the major developed markets, products with sales of more than $142 billion are losing patent protection over the next five years. However, collectively, the competition from lower-cost generics may reduce total drug spending by about $80 - $100 billion worldwide through 2014, especially in major therapy areas such as cholesterol regulators, antipsychotics and anti-ulcerants (IMS Health, 2010a). This is obviously good news for the patients and the publicly-funded healthcare systems worldwide. However, it has been depressing big phamas whose growth rates are bound to be at stake. This news also alienates those companies from their investment partners who are crucial to sustaining their risk-taking innovative research.

4.3.2 FDA Raising the Bar
The second major change is FDA’s rising bar for new drug approval which stipulates stricter and more data. In other words, it costs more and takes longer to get the drug to the market, if the chance of failing to obtain FDA approval is not higher than before. The overall benefit-risk relationship of a new drug is essential to FDA’s decision on whether or not to approve a new drug. However, this relationship evolves along with the advances in medicinal sciences and technologies. As we are putting the various kinds of drugs in use, we are also accumulating evidence and knowledge which provide further insights into the safety and efficacy issues which may not yet be disclosed during the development research period, especially side effects, due to our cognitive limitation and bounded rationality in our understanding of the disease and measurement techniques (Nelson & Winter, 1982b; Simon, 1991)—a demonstration of the evolutionary navigation or negotiation process of humans collectively in adapting to the constraints via learning.

The demands for regulatory data have been steadily growing since the early 1980s (Easton, 2006). To date, adding to safety and efficacy, drug makers have to show FDA how their new drugs are medically differentiated from the existing products in the market. For example, FDA used to approve diabetes drugs based on their ability to improve glycemic control, one single element of the many cardiovascular risk factors, without a more holistic standard. This compromise in the approval standards had been made due to the fact that heart disease accounts for 75% of all deaths among diabetics. However, post-marketing evidence show that some of the drugs capable of lowering the blood sugar are not able to reduce cardiovascular events or provide any beneficial cardiac effects, and some might even increase the chance of heart attack, such as Avandia (Szwarc, 2008). In December 2008, FDA therefore raised the standards to approve new diabetes drugs,
requiring larger participation of high-risk patients and longer duration for the clinical studies to provide better safety profile, as a corrective action to their previous ignorance in the regulation of this medicine. This reflects the self-organizing mechanism of our human activity system.

However, this policy change immediately impacted 100-150 pharmaceutical companies whose diabetes drugs were under development. In other words, they need to invest more and wait longer to see the return on their investment, and more importantly, their stock performances tumbled on Wall Street. Overall, their financial productivity was significantly reduced (Associated Press, 2008a). Industry observers immediately expected that this change might also redefine the framework for the approval standards for the other long-term drugs such as treatments for cholesterol, mental illness and anemia (Szwarc, 2008). In the same year, when FDA reviewed two cholesterol drugs, in addition to meet the standard of lower cholesterol levels in patients, they also required the companies to conduct additional large-scale trials tracking whether patients actually lived longer or had fewer heart problems while taking their drug, as a clear advantage over older medications (Associated Press, 2008b). In fact, some industry analysts had even caught the signal of tighter FDA review as early as August 2007, saying that the present pharmaceutical landscape has been changing since then (Fiddian, 2007).

4.3.3 Purchasing Power Falls in the West

The third rupture happens to the consumers’ purchasing power in the current major pharmaceutical markets. During the recent global economic recession, governments of countries, especially those in the developed world have been trying to cut
budgets. Public healthcare is one of the most impacted areas. Countries including Turkey, Spain, Germany and France have already announced plans to reduce growth in drug budget by applying across-the-board restrictions on access or reductions in reimbursements (IMS Health, 2010a). The US healthcare system is also undergoing fundamental changes toward shifting more burdens to patients themselves, adding to the loss of purchasing power already caused by the rising unemployment.

4.3.4 The Evolutionary Dynamics of Globalization at Work

The evolutionary dynamics of globalization push our humanity and civilization to the optimization of the allocation and utilization of both our natural and social resources, leading to the balance of and providing sustainability of the global ecosystem. Our legal system and other social or institutional enforcement demonstrate this force. The patent law is surely one of them. The essence of this law, on the one hand, encourages innovations and therefore rewards the inventors by providing them exclusivity to the patented intellectual property; on the other hand, it puts a time limit on that. This process, in fact, delivers the message that the innovation or any form of intellectual property, as a type of social resources in our human society, eventually belong to and thus should be shared by the global human community. Therefore, in my research context, the patent law serves as a resource re-allocation mechanism when a patent comes to expire. As Nelson and Winter (1982b) summarize,

“Public laws, policies, and organizations are an important part of the environment that shapes the evolution of private sector activities. Laws and policies regarding what is patentable and what is not, and about acceptable or required licensing agreements, influence the relative advantages of innovating and imitating.
Antitrust law and its administrative and judicial interpretation define acceptable competitive behavior…A significant portion of economic activity is conducted by public rather than private organizations. The evolution of economic capabilities and behavior must be understood as occurring in a mixed economy” (p.371).

Regarding the price competition from generic drug after patent expiration and how that influences the evolution of a firm and the industry, Nelson and Winter (1982b) have the following explanation:

“By this selection process, clearly, aggregate input and output and price levels for the industry would undergo dynamic change even if individual firm operating characteristics were constant. But operating characteristics, too, are subject to change, through the workings of the search rules of firms. Search and selection are simultaneous, interacting aspects of the evolutionary process: the same prices that provide selection feedback also influence the directions of search. Through the joint action of search and selection, the firms evolve over time, with the condition of the industry in each period bearing the seeds of its condition in the following period” (p.19).

And this may explain how the different companies increase or decrease their business capabilities to be a generalist or specialist to maximize their profit margins. The formation of the CRO industry might be a product of this evolutionary process.

The advancement of science and technology is another fruit of our civilization through evolutionary navigation through and negotiation with uncertainties and constraints. It empowers us at the same time it serves us. This empowerment is a great vehicle that carries our capability to improve and evolve. In my research context, this point has been explained earlier in examples as for how we learn from previous medicinal practices to derive safer and more effective drug approval standards. When this capability
is reinforced and represented by the functioning of nation-state or government, the compatibility of various forces such as the business community and the mass public in our social ecosystem can be enhanced. When the pharmaceutical industry can not fulfill its social normative value purported by its unreasonably high growth, the increased regulatory hurdles enforced by the US government agency FDA exactly assumes the role to reduce the gap by slowing its growth, therefore serving as an institution to harness the gradient caused by the mismatch between values measured by individual cultural necessity and those to full the normative requirement from the environment.

As for the purchasing power at the various global markets, for a long time within the contemporary context of human society, it has been poled toward the advantage of the western hemisphere. 11% of world population as the developed world represents, consumes the 70% of the products of the global pharmaceutical industry (Sartarelli, 2009). The inequality is obvious and is surely a target of the evolutionary dynamics of globalization toward a better coordination and allocation of accesses to health, wealth and other forms of global resources. This also speaks to why the emerging markets representing 45% of world population (Sartarelli, 2009), bear the highest growing momentum under the tide of globalization in the contemporary era.

4.4 The Restructuring of the Global Pharmaceutical Industry

“The global pharmaceutical is at the cross-roads of never seen before challenges and opportunities…”

– Jose V. Sartarelli, Company Group Chairman, Asia-Pacific/Japan/Latin America, Johnson & Johnson
In previous sections of this chapter, I have captured the fundamental changes that have shaken the traditional operation model of the global pharmaceutical industry and related them to the evolutionary dynamics of globalization. Then I have interpreted the major external ruptures that have happened to the ecosystem of this industry from the perspective of industry practitioners. In this section, I will discuss where those external ruptures have been pointing to for the systematic restructuring of this industry as an adaptive and strategic response. I will also look at how the evolutionary dynamics of globalization shapes the final outcome of this wave of industrial restructuring, where innovations and new opportunities spring underneath the turmoil to regain the pattern of balancing where global well-being and sustainability is enhanced.

4.4.1 The Pattern of Rebalancing

In response to the three external changes that have been rupturing the traditional model of the pharmaceutical production, its restructuring has been demonstrating the following pattern. Companies, especially the industry leaders are generally adopting two major strategies – to expand market and to increase productivity. They may also use a combination of them (see Figure 9).
Figure 9: The Restructuring of the Global Pharmaceutical Industry
Market expansion is also taken in two forms: product portfolio expansion and geographic expansion.

Companies’ product pipelines are getting more diverse than before. Researchers continue to explore innovative drugs to fulfill unmet needs to treat diseases with no previous therapies or to offer improved treatments over older ones. Vertically many of them have gone beyond the traditional small molecule drugs and increased their investment in large molecules such as protein and RNAi therapeutics as in Roche’s product portfolio (Fotouhi, 2009). In addition, they are also seeking opportunities horizontally in biologics (e.g., Merck (Palkowitz, 2009)), diagnostics (e.g., Roche (Fotouhi, 2009)), generics (e.g., Novartis (McKinsey & Company, 2009)), and devices.

Geographically, companies are looking for locations that can offer compatibility with their products regarding either disease profile or purchasing power.

As for disease profile, drugs are introduced to the new markets to treat either diseases that have global commonality such as flu or diabetes, or those that are specific to the local. As a typical strategy of their initial market entry, most companies have adopted the former--taking advantage of global commonality of certain diseases. This usually only necessitates the conduction of clinical studies at the local area to research the effects of the drugs on the local population so as to obtain the marketing permission there. To meet local specificity, companies are likely to establish Research and Development (R&D) center in the new market, to integrate both the identification of the target disease and other drug development processes. AstraZeneca’s “China for China” strategy and Roche’s wholly-owned R & D model are two typical examples of the localization strategy.
With respect to purchasing power, at the individual level, GDP per capita is an important factor for companies to consider; collectively, markets are differentiated by population size, especially affluent population, and government support, particularly the system of public healthcare.

Besides market expansion, the other general strategy adopted by the industry is to increase productivity, which is usually achieved through reducing production cost and/or shortening drug development cycle time.

When cost is concerned, companies tend to seek lower-cost material and service suppliers around the world wherever there is the cost advantage. And this initiative usually ends up off-shoring part or sometimes all of the pharmaceutical production including preclinical research, clinical studies and manufacturing.

They also try to minimize operational inefficiency. For the labor force in this industry, various scales of lay-off ensue. With respect to production property, inefficiencies are leveraged through mergers and acquisitions (M&A), licensing and/or outsourcing.

To shorten the time of bringing a drug to market, pharmaceutical companies partner and collaborate with biotechnology ("biotech" hereafter) companies, contract research organizations (CROs, outsourcing) and academia to expedite drug discovery with proof-of-concept (POC). POC is one of the most important parameters in the decision-making of investors in this industry. For example, Merck has adopted the external basic research strategy which they claim is able to “balance different types of partnerships to extract the greatest pipeline value from external research across disease areas and phases of discovery” (Tillyer, 2009).

Other than generating POCs in a faster manner, drug developers also try to save time during the most time-consuming clinical studies phase. However, the recent increase of
regulatory hurdles has caused them lots of headaches. Here again, resorting to the strategy of outsourcing and offshoring represented by the transnational CRO industry becomes more and more common.

4.4.2 Innovations

This situation described in the last two paragraphs of the section above, illustrates the dynamic tensions among the pharmaceutical industry, the financial sector, and the government regulation. Saskia Sassen (2000) theorizes that economic opportunities grow out of the uneven temporalities of economic activities, where the production of profits in the financial sector is much faster than that in the manufacturing sector. These uneven temporalities become structural holes that create information, referral or control benefits (Burt, 1992). These uneven temporalities can also be explained as the gradient or inequality organizations form to transform, according to the resource-based systems approach.

The structural incompatibility between pharmaceutical production and its financial expectation has generated space for the foothold or the market niche with enough structural autonomy for outsourcing Burt, 1992; Hannan & Freeman, 1989), which has gradually transformed into the business model of CRO as an innovation within the context of the global pharmaceutical industry. To solve the dilemma faced by pharmaceutical companies between building manufacturing infrastructure and meeting production peaks in terms of time/resource allocation (Easton, 2006), services provided by the CRO bring in the flexibility in accessing and allocating research capacities on a project-by-project basis, replacing the fixed labor and property cost internal to the companies under the traditional pharmaceutical production model. Regarding the benefits of Merck’s preclinical development sourcing strategy, Dr. Richard Tillyer,
Senior Vice President, Worldwide Preclinical Development at Merck Research Laboratories, mentions the following:

- Increased flexibility
- Preferred access to additional capacity
- Preferred pricing / cost advantage
- Targeted talent allocated to Merck projects

As identified in Figure 9 in the color of orange, besides the innovation in business model, there are another two major innovations that have been conceived and strengthened during this restructuring process of the global pharmaceutical industry. Firstly, with companies’ diversified interests in research pipelines and integrated research capacities built through the partnership with CRO, biotech and academia, a new wave of innovations in the pharmaceutical science and technology is expected. Moreover, the entrepreneurial behaviors of the CRO and the biotech businesses, as well as the related investment in the costly high-caliber equipment to retain competitiveness, also open up a window for innovations in the financial sector where venture capitals come into playing an active role. As for the pharmaceutical industry itself, as its own operational model is changed by M & A, licensing, and outsourcing, the related financing tools are also under remodeling, such as the creation of BCPA out of Baird Private Equity as discussed in Chapter 3.

4.4.3 Global Geographic Diversification of Industrialization

With all the innovations and opportunities displayed in the restructuring of the pharmaceutical industry, one prominent finding is that the function of pharmaceutical outsourcing is assuming an increasingly crucial role during this industrial reconfiguration.
The ruptures that have occurred to the global pharmaceutical industry have legitimized the market niche for the business of CRO, in addition to the individual firm’s efforts to establish the legitimacy. As I have explained before, both the traditional pharmaceutical companies and the biotechs need CRO’s flexible and specialized services to coordinate their production capacities and capabilities for better time/resource allocation.

In addition to receiving sponsorships from pharma and biotech companies, CRO also becomes another playground for venture capitals, an important source of money supply for the later scaling-up of the CRO business into its industrialization.

Another very interesting and special phenomenon in this wave of global pharmaceutical industry restructuring is that, the large volume of labor force laid off by the traditional pharmaceutical companies has found their way at the CRO industry, becoming the industry’s major labor supply. From the perspective of economics, a re-division of labor has happened in the restructuring of the global pharmaceutical industry. This division of labor, along with its well-defined market niche and well-legitimized sources of money supply, embodies the industrial specialization of the global pharmaceutical industry (Krugman, 1979), which is crystallized into the auxiliary CRO industry.

This group of labor force has the following four major characteristics. Firstly, they acquire deep knowledge and rich experiences with the pharmaceutical development and commercialization. Secondly, they may easily transfer their previous connections with the pharmaceutical companies into the businesses in the CRO industry as clients. The third characteristic has its historical embedment. There has been a severe shortage of scientists in areas such as chemistry and biology, etc. in the world labor market, especially in the US. An extensive recruitment of highly-educated international labor force from the third world countries
occurred in the 80’s and 90’s. This group of labor also became the major labor supply for the pharmaceutical industry, especially in the R & D division. At the beginning of the 21st century, the majority of them unfortunately became the victims of the industrial restructuring. However, what remains unchanged is their international ties with their countries of origin, especially with those emerging markets such as China and India. This historic factor will be further explored in Chapter 5 through the micro-level analysis of individual life histories. Lastly, as well-educated immigrants who have been weathered in the mainstream western corporate culture for many years, out of both the needs of survival and self-realization after the lay-off, they have demonstrated the entrepreneurial ambition that is different from the older generation immigrants, like those stereotyped in Chinatown. Instead, the contemporary diasporic labor eye cross-border high-return business opportunities in the knowledge-intensive scale business such as those in the CRO industry. These entrepreneurs are not only interested in the US market, they are also setting up operations in their countries of origin, receiving the off-shoring business projects from the traditional pharmaceutical and biotech companies.

During this global industrial restructuring, among this group of labor force, some grow into entrepreneurs, while others end up being other’s employees again. Regardless of the new role they have assumed in the later stage of their career, they have become the essential cross-cultural social capitals organically gluing and smoothing the two industrial trends of global off-shoring and specialized outsourcing activities in the global pharmaceutical industry (Saxenian, 2006). This dynamic has synergistically put into effect the transnational integration of pharmaceutical production, as seen from the lower right corner of Figure 9.

Back to the pharmaceutical companies themselves, their global geographic expansion in terms of marketing, partnered with the industrial trend of off-shoring of production, has
promoted the industry’s internationalization (See lower left section of Figure 9). The establishment of the R&D center at a new market often entails the global transfer of key technology. The simultaneous appearance of the three signals—industrial internationalization, global transfer of key technologies, and transnational integration of production, have pointed toward the global geographic diversification of industrialization, forming the pattern of a restructured resource organizing dynamic, where globalization can be seen and felt.

4.5 The Progressive Positioning of China in Global Resource Integration

After the analysis of the global pharmaceutical industry and its evolutionary dynamics under the contemporary globalization from the grandest global perspective, this section will zoom in this analysis to the national and communal levels and answer the question of how China, as the most typical representative of the third-world countries and emerging markets, and the Chinese diaspora have been playing a role in this global resource integration.

4.5.1 Why China? —The Signal Given by the US Government

Under the international programs of the U.S. Food and Drug Administration, there is a recent initiative called “Globalization: Geographic Programs.” Therein FDA introduces:

“Globalization is a fact of 21st century economic life. It has resulted in United States markets being composed of a myriad of imported goods that our consumers want and need. Based on the volume of imported products from specific areas, problems that have been associated with products over the years, and value to be derived from leveraging the activities and resources of trusted foreign counterpart regulatory authorities, FDA has identified China, India, the Middle East, Europe, and Latin America as areas in which to establish a permanent in-country presence” (U.S. Food and Drug Administration, 2010b).
To further justify that initiative, FDA says, “by promoting food and drug safety and quality, and helping to raise standards beyond our borders, we can better protect Americans while they continue to enjoy the benefits of the global marketplace…and more importantly, contribute to the overall public health of our global community” (U.S. Food and Drug Administration, 2010a).

In November 2008, right in the turmoil of the global economic crisis, FDA unprecedentedly opened its first oversea office in China. Out of all the location choices introduced above, China has been chosen to be the spearhead of FDA’s geographic expansion program under globalization. In my opinion, this event has also served as an official signal to the legitimacy of the strategic importance of China positioned in the global resource integration of the pharmaceutical production.

4.5.2 Why China? —The Perspective of Big Pharmas

In his presentation at the 17th annual conference of the SAPA, the Company Group Chairman, Asia-Pacific/Japan/Latin America at Johnson & Johnson, Dr. Jose V. Sartarelli, says, “winning China is a ‘must’,” as China is the “largest and fastest growing pharmaceutical market of the emerging market” (Sartarelli, 2009). The company also identifies the following growth drivers for that market:

- Demographics – aging, urbanization
- Rise of prevalence of chronic “modern” disease (e.g., 50% of Roche’s global patients for its Hepatitis C treatment product PEGASYS are from China.)
- Growth of disposable income
- Healthcare reform investment – broader and better medical coverage. More specifically, while most countries are cutting their healthcare budget, the CAGR of the public healthcare expenditure as a high priority for both the central and local
governments in China, is projected to 19% during 2008-2013, faster than its GDP CAGR of 15% for the same period. In the next three years, its healthcare budget will grow from 0.8% to 3% of GDP.

The importance of “winning China” can also be observed from other big pharma companies representing the trend embraced by the industry as a whole. In the 2009 Fortune Global 500, there are 12 multinational pharmaceutical companies who are large enough to be included there in terms of revenue (Fortune, 2009). They are ranked as below according to their 2008 revenue (see Table 3).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Revenue ($ million)</th>
<th>Rank</th>
<th>Company</th>
<th>Revenue ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Johnson &amp; Johnson</td>
<td>63,747</td>
<td>7</td>
<td>AstraZeneca</td>
<td>31,601</td>
</tr>
<tr>
<td>2</td>
<td>Pfizer</td>
<td>48,296</td>
<td>8</td>
<td>Abbott Laboratories</td>
<td>29,528</td>
</tr>
<tr>
<td>3</td>
<td>GlaxoSmithKline</td>
<td>44,654</td>
<td>9</td>
<td>Merck</td>
<td>23,850</td>
</tr>
<tr>
<td>4</td>
<td>Roche Group</td>
<td>44,268</td>
<td>10</td>
<td>Wyeth</td>
<td>22,834</td>
</tr>
<tr>
<td>5</td>
<td>Sanofi-Aventis</td>
<td>42,179</td>
<td>11</td>
<td>Bristol-Myers Squibb</td>
<td>21,366</td>
</tr>
<tr>
<td>6</td>
<td>Novartis</td>
<td>41,459</td>
<td>12</td>
<td>Eli Lilly</td>
<td>20,378</td>
</tr>
</tbody>
</table>

All of the twelve companies now have presence in China, especially in clinical studies and manufacturing. For example, AstraZeneca has 40 clinical research projects in China, involving over 700 medical institutions over 10 years. In particular, Novo Nordisk (a Danish company which is not in the list above), AstraZeneca, Eli Lilly, Roche, Pfizer, Sanofi-Aventis,
GlaxoSmithKline and Johnson & Johnson, these eight companies have already set up R & D centers in China chronologically, as early as 1994.

Roche has made it very clear that, for them, the driver to off-shore its production in China is not cost savings, but the access to science and technology (Fotouhi, 2009). In general, the drivers they have given during the SAPA conference can be summarized in six categories:

(1) Human capital: A large number of western educated talented scientists have already returned or are interested in working in China. In addition, there is an excellent pool of talented and motivated internally educated scientists. Many of these two groups of scientists have strong entrepreneurial spirits.

(2) Science and innovation: The level of science and innovation in China continues to increase. As the global economic downturn unfolds, in 2009, international patent applications filed under the Patent Cooperation Treaty (PCT) dropped by 4.5% worldwide and the US applications showed for the first time a double-digit fall. However, for the same time period, applications from China increased 30% (Cyranoski, 2010).

(3) Government subsidy: The Chinese government mandated investment in R & D has resulted in great working infrastructure for foreign companies to establish partnership with local institutions and emerging biotechs.

(4) Outsourcing support: A large number of established CRO companies are providing high-quality and flexible fee-for-service support.

(5) Market demand: With the largest population in the world, China is currently the 5th largest pharmaceutical market and is projected to be the 3rd as soon as 2011. There is a need to bring novel drugs to the Chinese population that are specific to the Pacific Rim as well as western-type diseases that are becoming more prevalent due to affluence. And 20% of its population is projected to be affluent and be able to afford expensive western medicines.

(6) Clinical resource: China’s large population size also makes it relatively easier to recruit participants for clinical trials.

4.5.3 Grassroots Coordination of Social Capital Triangle
Market competition entails three types of capital, namely, financial capital, human capital and social capital (Burt, 1992). Social capital is relationships within and beyond the firm, and “is final arbiter of competitive success” (Burt, 1992). On the 17th annual conference of the SAPA in 2009, four top figures each from a giant multinational pharmaceutical company, showed up as the plenary speakers. They are –

- Alan D. Palkowitz, Vice President, Discovery Chemistry Research & Technologies, Lilly Research Laboratories, Eli Lilly & Company
- Jose V. Sartarelli, Company Group Chairman, Asia-Pacific/Japan/Latin America, Johnson & Johnson
- Richard Tillyer, Senior Vice President, Worldwide Preclinical Development, Merck Research Laboratories
- Nader Fotouhi, Vice President, Pharma Research Nutley, Hoffmann-La Roche

During the one-day workshop, a question kept coming into my mind—why the top management of these big pharmas was willing to sacrifice their Saturday morning and to fly from out of town to participate this event organized by grassroots Chinese ethnics? Obviously, the answer was gradually unfolding after each of their presentations, which culminated in the key words of the speech of the Vice President from Roche --to develop relationships with the Chinese market.

As mentioned in Chapter 3, each year SAPA and its regional chapters organize and/or sponsor various kinds of conferences, scientific symposia, seminars, workshops, and social activities, both in the U.S. and in China. All the Fortune Global 500 pharmaceutical companies I mentioned earlier except Abbott Laboratories, are engaged as corporate sponsors for those events. For the 2009 annual conference, there were 34 companies. The largest twelve sponsors were Roche, Merck, Sanofi-Aventis, Johnson & Johnson, Novartis, Wyeth, Bristol-Myers Squibb,
China Medical City (a Chinese government-sponsored local development area promoting the medical-related industry), Eli Lilly, Schering-Plough, and Boehringer-Ingelheim. Also, in the list of SAPA 2009-2010 executive council members, 14 people have full-time positions at big pharma in the United States, like the President Dr. Mingde Xia, who is the Senior Director at Johnson & Johnson Corporate Office of Science and Technology. The rest of the 12 members represent other pharmaceutical, biotech and CRO companies of various sizes.

On the 2009 annual conference of SAPA held in New Jersey, the plenary session featuring the top management from the four big pharmaceutical companies, was followed by greeting remarks by Mr. Keyu Peng, the Consul General at the Consulate General of the People’s Republic of China in New York.

By that point, I had already been able to tell how powerful the SAPA was in mobilizing cross-border economic, social and political resources in such a bottom-up manner.

In the afternoon there were two panel discussions. The first topic was “East-West Collaboration: CRO Roundtable.” Panelists were the top management from the leading CRO companies based either in the US or in China. Sam was one of them. But one thing in common for those panelists was that the US-China ties were the key to the success of their business.

The second panel discussed the various kinds of new business models that grew out of the restructuring of the global pharmaceutical arena. The panelists, all Chinese, generally had four types of background. The first was the management of the state-sponsored science and research agencies from China, who were often government officials as well. The second type was scientist entrepreneurs who had working experiences in big pharma in the western hemisphere. The third was university professors who commercialized their research products.
The fourth type was also entrepreneurs composed of direct university graduates without much industrial experience before starting their businesses.

SAPA-- this grassroots ethnic organization has been weaving a transnational social capital triangle in their social network consisting of business firms, government and science labor. This triangle, as an emergent property of the system’s self-organizing mechanism, has been playing a role in balancing and coordinating the relations and dynamics of two divergent social, economic, and political systems. One is characteristic of the capitalist market economy in the West, while the other of the socialist market economy in the East, specifically China. Collectively members at SAPA explore the “structural holes” (R. S. Burt, 1992) in the social ecosystem of the global pharmaceutical industry and thus identify opportunities for themselves, who would otherwise become the disadvantaged or constrained group in this wave of global pharmaceutical industrial restructuring. This type of grassroots initiative at the communal level has been alleviating or correcting many of the innate drawbacks and deficiencies lying in the respective socio-economic systems mentioned above.

In this relationship triangle of business, government and grassroots labor, everyone seems to be a winner. First of all, big pharmas want to establish relationships through SAPA with the Chinese market, especially the Chinese government. Because in China, through policy-making and state planned investment, the government often directly decides the survival and/or the prosperity of certain industries in the Chinese market. Meanwhile, the government is also interested in bringing back transnational talents (the Chinese returnees) who usually take along with them the external investment and knowledge of advanced sciences and technologies to further develop China’s economic and social infrastructure. Moreover, for the individual overseas Chinese who are already working in western corporations, they would have higher
chances of success in their corporate career thanks to the transnational social capitals innate within themselves to break the glass ceiling (Burt, 1992).

For those who are not in the corporate atmosphere, this triangle also creates room for transnational entrepreneurship in the knowledge-intensive sector of the global pharmaceutical industry, which did not exist for the earlier generation of overseas Chinese. This type of entrepreneurship is important not only in the sense of value-creation for the economy, but also in promoting social stability (Saxenian, 2006). Obviously, entrepreneurship creates job opportunities for those who have been laid-off in this wave of industrial restructuring. It is also an alternative to a corporate career choice for other transnational labor force, to whom the economic survival is no longer a major concern.

For any of the types of diasporic group mentioned above, more importantly, the mobilization of transnational social capital and the execution of entrepreneurial opportunities in the mainstream economic sector in the host country serve as a vehicle for their self-realization. This practice of self-realization plays an important role in the identity-building for the immigrant labor who were often disadvantaged and deprived of equal opportunities in many aspects of their diasporic life.

Identity-building is essential to the well-being of the diasporic labor worldwide in the contemporary era of globalization, if not merely under the new capitalism (Sennett, 1998), when for most of them economic stability is of less concern now than before. They more look for the social space for recognition and/or self-realization as one of the basic human needs. And this is especially important for immigrant-intensive business industries and societies, such as the global pharmaceutical industry in the United States. And this topic will be further explored in Chapter 5.
4.6 Summary

From the resource-based systems approach, this chapter identifies and analyzes the fundamental cause to the contemporary globalization dynamics of the pharmaceutical industry, namely, the mismatch and imbalance between the economic ambitions of this industry and its related financial community and the actual social values this industry has created for the human society measured by the evolutionary necessity of the global social ecosystem as a whole. Patent expiration, rising regulatory hurdles, and falling market growth momentum in the West, are identified as the three major demonstrations of the dynamics that evolve to rupture the traditional pharmaceutical production model, leading to the global industrial restructuring. Through this restructuring as a way of redistribution and rebalancing, efficiency in allocating and integrating global resources to reach the social ecological sustainability, is regained through innovations of business models, scientific advances and money supply, as well as the consequent global geographic diversification of industrialization. After the grand analysis of this process on a global scale, the positioning of China is analyzed from the perspectives of western stakeholders, giving the national layer of this global dynamics. Furthermore, with the elevated strategic importance of China, the diasporic Chinese in the pharmaceutical scientific community, as transnational social capitals and with entrepreneurial spirits, in exploring the structural holes in the network triangle comprised of western mainstream business enterprises, the Chinese government, and transnational science labor, further facilitates the global resource integration and social stability, especially in bringing in the collaboration of the two divergent social, economic, and political systems in the host and home countries. The efficiency gained through network-based mechanism of global resource integration grants these otherwise disadvantaged diasporic figures a unique competitive advantage, where their identity-building and self-
realization essential to their well-being is achieved. In the next chapter, the topic of life satisfaction through the individual telling of their life histories with its cultural heterogeneity and historic idiosyncrasies will be discussed.
CHAPTER 5: LIVING THE DIASPORIC LIFE

This chapter continues to address research question set 3: What are the innovations and controversies in the identity building and life philosophy of the Chinese diaspora featured in my research context in the living of both their professional and personal life? How do those innovations and controversies speak to people’s cultural necessities of their value systems, which collectively reflect the historical trajectories of the system of Chinese culture? Comparing with the political and economic systems of the society of China, how does the system of Chinese culture shed light on the contemporary role of China on the world stages?

This part of my research includes in-depth interviews with 4 family and 12 individual subjects, which cover previous and current, old and new, male and female employees with various job ranks from both US and China branches of Leading Edge, three family members of a current employee, and one family who are friends of and referred by a previous employee at Leading Edge. There are 20 individuals in total. The interviews were guided by the following questions: Why and how did they come to the United States, enter the pharmaceutical industry, and join Leading Edge? What have been their dreams and pains, and losses and gains personally and professionally in the transition of their roles from a Chinese, to a diasporic Chinese and to an immigrant in the United States? What’s their current level of life satisfaction and desire to improve? And how do they feel about the financial crisis?

5.1 Who Are They?

In this section, the life histories of four most representative individual and family informants are selected to demonstrate the spirit of entrepreneurship of this group of people in
the self-organizing process of navigating through their diasporic life. With the learning and willing-to-change attitude toward complexities and uncertainties in their life, they negotiate relations in interacting with the changes in their social environment and explore structural responses to gain coherence or efficiency of the organizing dynamics in living their life. The accumulated knowledge, as innovations of human social life, adds their evolutionary capabilities and transforms constraints and loss of control on their paths to human emancipations in terms of self-realization and life satisfaction, while still carrying the historical luggage of the cultural necessities from the system of Chinese culture. Serving as a type of historic records for the discourse of globalization in its contemporary reality, these life histories will be transcribed and documented here by verbatim.

5.1.1 A Bridge to Big Pharma / Retire as Soon as Possible

Mike, 34 joined Leading Edge’s Shanghai site in April 2008. Right now he is on a one-month training program in the US provided by the company. After Sam moved to his new house, he leased out his old 4-bedroom house to the company and employees who needed temporary housing. I lived there in the summer of 2009, by paying $500 per room per month. Mike also lived there during his one-month training, but the company paid for his rent. I interviewed Mike in the dining room of the house during his last dinner before returning to China.

Mike’s parents are from Sichuan Province, but he was born in Xinjiang Province. When his sister settled in Hunan Province upon graduation from college, the whole family moved to Hunan. Mike is the youngest in the family.

With a college degree in Applied Chemistry, Mike joined the Army in China in 1997 as an assistant engineer in an area which also sits in the broad industry of pharmaceuticals--
producing active pharmaceutical ingredients (APIs). They sell their products to the markets, especially those Army affiliated hospitals, competing with all other for-profit pharmaceutical companies. Three years later, he went to Fudan University in Shanghai for his master’s degree in Pharmaceutical Analytics. Upon graduation, he returned to the Army and resumed his previous position until 2008. But when he returned, he did not get promoted with an advanced degree. He explained, “in the Army, your promotion is not necessarily related to your degree. Instead, it depends on how many you have stayed there. There are strict rules stipulating the number of years required for a promotion.”

Since he has been in the pharmaceutical industry for over ten years, I asked him about his opinion toward this industry. He answered, “I can only talk about the industry in China. I’m not very familiar with the situation abroad. Generally speaking, the pharmaceutical industry in China still focuses on imitation (generic drug as mentioned in Chapter 2). The level is relatively low. I think some statistics have said that, 97% of the drugs circuiting in the market are imitation drugs. China doesn’t have intellectual properties owned by themselves.”

“How does that influence researchers like you?” I asked.

“Of course there is some influence. As none of the pharmaceutical companies launch innovative or discovery research, there is no position available for us even if we want to do that. We can only research on how to imitate drugs innovated by others and develop them. You won’t be able to go through the process of discovery.” Mike said.

“This doesn’t feel nice, does it?” I said.

“I think it should put this way—for people who are into research, it definitely not.” He said.

“Are you one of them?”
“Me? Partially. I probably was like that before, but now I’m sort of OK. When I was younger, I was fond of science and research. Later on, I gradually feel…um…How can I say? Since life is comprised of many things, that was just one part of it. For example, I used to spend lots of time in the lab, including my spare time and often weekends, both when I was in school and at my job. Nobody requires me to work overtime, but I just want to. You got lots of fun from it.” Mike said.

Then I asked him about the situation in the CRO industry.

Mike said, “CRO started to grow in China in the last three to five years. Before that, the clients of CRO are only confined to domestic companies, not the foreign ones. Right now foreign clients become the majority. They are from all over the world and in various sizes.”

“Why they choose China?” I asked.

Mike first described the industry trend at that time, “the business model for CRO in China before 2002 was to imitate foreign innovator drug products whose patents were about to expire, and then apply for their approvals for clinical studies or manufacturing. CROs made profits by transferring those approvals to pharmaceutical companies. The scale of this generic drug industry was large. At that time, for any single type of drug, as long as it had wide application, at least 30 pharmaceutical companies could obtain the approvals. But later on, the pharmaceutical regulation system changed. You must have known about Zheng, Xiaoyu, haven’t you? He was the former head of the State Food and Drug Administration (SFDA) in China, and was executed for taking bribes to approve untested medicine. Ever since, it has been difficult for generic drugs to get new drug approvals. The market was tightened. Thus the CRO companies needed to explore other opportunities, and then they started to target clients from abroad, which needed pharmaceutical APIs and intermediates. As a result, the CRO industry found its way to
further development by changing its focus onto organic synthesis. For many CRO companies such as Wuxi Pharma Tech, ChemPartner, and Charles River, their top management has study abroad background and has worked in the pharmaceutical industry abroad. They have some social networks.” Mike continued, “these people have either returned to China for good, or are traveling between China and overseas. Some people have many students abroad, such as Hui, Yongzheng at Charles River.”

“He is a professor?” I asked.

“He was the head of Shanghai Institute of Organic Chemistry and Vice Minister of Science and Technology in China. He has many students in the area of organic synthesis who are overseas, and who may have very likely entered the pharmaceutical industry abroad. So he has the personal connections, by which he can get the businesses from overseas.”

“How has this industry developed now?” I asked.

“As the scale of this industry gets bigger and bigger, its business area also expands. As the analytical support for synthesis, you have to do the corresponding method validation and purity analysis, etc. Following the production of API, you are bound to come across things like formulation, quality control, and pharmaceutical analysis. So it will unfold like that. Following the logic, you would think of doing something of higher value or more profitable,” Mike said.

“Foreign clients only gave you the lower-level synthesis business. Was it because they did not trust China’s research capability?” I asked.

“There has been a process. For example, now I let you do organic synthesis, and you do it well. If every time the quality of your product is good, it shows I have no problem with my quality control system or pharmaceutical analysis. As our mutual understanding is deepened, you may tentatively consider giving me other projects,” Mike answered.
“By the way, is cost a factor?” I furthered.

“Of course. This is common sense. For many works done in China, first, the labor cost is relatively low; second, there is little cost for environmental concern; and third, in the area of experimental ethics, such as animal experiments or clinical trials, the cost is also low. Therefore, they are definitely gonna come to China,” Mike said.

“Outsourcing has existed in many global industries. It seems to be particularly popular in the pharmaceutical industry. How do you look at the prospect?” I asked.

“This question is relatively difficult to answer. Actually I didn’t think of it before,” Mike said.

“You seem to be very knowledgeable about this industry. After so many years of working experience, when you came to choose your career direction again, I thought you should have been very thoughtful,” I commented.

“Yes. If I’m to choose my next job, I definitely won’t choose CRO,” he responded.

“I mean this time. What about the decision you made last year?”

“Ah! That was because I just came out of the Army. I worked there too long. People don’t have much knowledge about the Army. They would doubt about your experience in the Army, however long it was, because they couldn’t verify it in order to be convinced. You can imagine, the experience of working in the Army for ten years, wouldn’t be same as if you work for one of the leading pharmaceutical companies such as AstraZeneca, GSK, Pfizer, or Johnson & Johnson. So I need to enter this industry first”

“So your first stop is Leading Edge?”

“Yes.”

“What’s your deepest feeling now?”
“Leading Edge has its strength. Among the CRO companies in China, as we’re in the analytical function, its biggest strength is its good GLP (Good Laboratory Practic) system. Also, its top management all has over ten years working experience in North America.”

“Did you know all these before?”

“No, during the interview, when you got a sense of the management and the company. Basically you can feel they are not like other companies, who purport to be foreign companies. But in essence they’re domestic companies who’re registered with funds from overseas. Here you can feel it is indeed a foreign company, with functional operation and entity in the US.”

“So what’s its weakness?” I furthered.

“The weakness is that they don’t care much about the benefits of the employees.”

“Is this common?”

“I think for this kind of small firms, this phenomenon should be very common. I think, same as the situation in the US, only those large firms, who have been established for about 100 years, can truly care about the benefits and development of the employees. Small firms, especially during their fast-growth period, none of them would consider these issues.”

“What is the reason?”

“This is very normal. As they’re in the developing stage, they have to allocate its resources in the most efficient way. They can’t think too much about things like employee benefits. Otherwise, their efficiency can’t be so high or it can’t grow so fast.”

“You didn’t know about this before you entered the industry, did you?”

“I thought a little before. But you feel more when it happens to you.”
“It sounds like, when you were looking for jobs, you directly ran into Leading Edge, and then you signed the contract, and then you didn’t look at others. Was it because you got lazy or something at Leading Edge attracted you?”

“At that time I did feel it was worthwhile to work here. Working experience in this kind of GLP lab is of value for the long-term career development. Compared to the large firms, small firms have their own advantages. Had I gone to a big firm, such as Novartis, I might just be a scientist; while here you have a group and you can accumulate some management experience, which is good for you.”

“You plan to have your own company?”

“I thought of that. The reason I went back to the Army after my Master’s was that I wanted to be on my own. In the Army, they will allocate you some resources which can be at your own discretion, similar to running a company. You can put your ideas into it and then commercialize them.”

“But you eventually left there. Why?”

“Later I felt it was difficult to succeed in that environment, so I chose to leave.” As for this answer, I recalled three days ago in a casual chat, Mike mentioned about that he couldn’t stand the working environment where everyone has to try his best to please the leaders in order to survive or get faster or better promotion.

“Are you going to continue pursuing the dream?”

“Um…How can I say? When you’re young, you often look at the advantages you have to become an entrepreneur, such as the technical expertise. But later on you’ll realize that’s only one of the many important factors. Give you a simple example, in China, I guess it should be the
same in the US, your connections and social networks are also very important. Entrepreneurship is not such a simple thing, for which you need to accumulate and prepare for a long time.”

“What does this foreign experience mean to you?”

“Maybe, to get a better understanding of the life in the US, the life of the Chinese in the US. The life here is simpler; the network is smaller and more restricted. But maybe the quality in terms of living standard is better than home.”

“How does the financial crisis affect you?”

“Um… To me, probably nothing. Since this thing doesn’t affect Leading Edge that much, so we’re not affected either.”

“I heard that they laid off some people.”

“I’m not sure about the US sites. In China, they cut off the formulation group, but that wasn’t really due to the financial crisis. They didn’t perform well.”

“What’s the biggest dream in your life?”

“My current biggest dream is to retire as soon as possible, maybe now, such as that I have a fund, the investment dividend from which can pay for my expense each year…” Mike laughed hardly while talking about this.

“What’s your biggest worry?”

“Definitely it’s the living! The rising of the income can’t catch that of the housing price—this is the biggest worry for a large number of Chinese.”

When asked about his current level of life satisfaction by choosing from 1-very miserable to 7--very satisfied, he chose 5. When asked to what extent he hopes to improve his life by choosing from 1—not at all to 5—very much, he chose 5.
5.1.2 Respect and Status / Balance between Work and Family

Sherry, the VP of Quality Assurance and Regulatory Affairs, was my direct supervisor in 2008. We also established friendship. For example, we would go do facial together at Philadelphia Chinatown in the weekend. We have been staying in touch and calling each other from time to time since I returned to school that year. In the summer of 2009, on Friday, July 17, Sherry asked me to spend a night at her house to be her company because her husband was on a business trip. That night, we went to dining and movie. Sherry is a great cook. The food she only simply prepared was very delicious to me.

On July 23, I interviewed Sherry in an office of her new company. Sherry has a niece, Jessica, who was then in China and was applying for graduate school in the United States. Sherry introduced her niece to me and hoped I could share with Jessica some of my previous experience at this stage of my education. I talked to Jessica before I interviewed Sherry. One key thing I noticed from Jessica was that she was hesitant to pursue her graduate degree in Finance, as she gradually found that she might be more interested in education. I shared my thought on Jessica with Sherry. And following that, I asked my first question which was related to the opening topic, “how did you choose your major in college? How did you make the decision to study abroad?”

“The college examination in China was resumed in 1978. I went into college in 1982. At that time, the school only taught us how to study, but not how to systematically plan our career. We were pretty blind in choosing our majors. In my case, I liked my Chemistry teacher in high school, who also liked me a lot. Then it was a natural response for me to choose Chemistry—a very simple decision. When it came to choosing a school, it was not decided by the mutual match between me and the school. The first thought was that I must go to college, whichever school it was. The national admission ratio at that time was that only 4 out of 100 people in my class year
could go to college. I went to college in Lanzhou (a city in Gansu Province). In the year of 1982 or 1983, studying abroad was not that popular in the colleges in my city, compared to those in Shanghai or Beijing. I directly went to work after graduation in 1986. I met my husband in my senior year. He was two-year older than me was studying his Master’s degree in the same major as mine. Starting in 1986, everybody wanted to go abroad or study abroad. It was like a dream—everybody wanted to do it. I was sort of naïve when I was in college, just thinking about getting high scores. In 1986, when I was facing the job market, I got more exposure to different kinds of people, especially those who were older than me. Then I suddenly found out that everybody was thinking about going abroad. I still didn’t think about that too much, as I was reluctant to run into those troubles of taking many exams again. But as I was dating my husband, I had an expectation on him concerning that. He also had an expectation of himself, because his predecessors were all preparing for studying abroad and taking exams such as GRE, TOFEL. However, we didn’t think too much about what the life would be after arriving abroad. It was like a trend where we were going to follow,” Sherry shared.

“You mention about that at that time everybody had that dream. What on earth was that dream in those years?” I furthered.

“In fact, it was very intangible. The feeling came when you heard someone got admitted by certain university and was able to study abroad. As for what the world looked over there, we had no idea. But we just had the feeling that that place must be good. You would feel pretty proud of yourself, so would your family. In 1989, two years after I graduated from college, I didn’t want to stay in Lanzhou anymore, because that city’s access to information was poor. At that time, my husband (boyfriend then) was already in this PhD program. It started to be very a fad to become a post-doc. This didn’t exist before. You would look pretty good if you could be a
post-doc. My husband’s dream was to become a professor in the university. It matched with his personality and lifestyle. But he also wanted to go abroad. Why? He always looked at people around him. Those who had been abroad usually had a broadened horizon, which was helpful for their future career development. The situation in China then was that if you had been abroad and looked at the world outside of China, you would be given a good position once you returned. But first of all, you must be excellent enough to be chosen to go abroad. Considering this situation, I applied for graduate school at the University of Science and Technology of China and moved to Beijing. When I arrived in my university, I realized a big change had been taking place in the last two years while I was working. Everybody, almost everybody, was preparing for TOFEL and GRE. Everybody was aiming to go abroad. That’s their big dream, big goal.”

“That was in 1989, right? Was it related to the June Fourth Incident?”

“Not really. It’s more like a fad. Especially for students in Beijing or other coastal cities, it’s their common goal to do this. In Beijing, within your friend network, you would them leaving one after another and day after day. It’s like a fashion. You have to be in the mainstream. We got married in 1990. My husband worked as a post-doc at Tsinghua University, who often sent him for short-term conference or study abroad opportunities. Those further strengthened his wish to go abroad. Things had been going smoothly. He received the scholarship from Humboldt Foundation to be a visiting scholar in Germany for two years. I also graduated from my graduate study. The scholarship was very accommodating, which allowed the recipients to bring the spouses along who could study language there…”

Upon arriving in Germany in 1993, Sherry met a lady in a networking opportunity organized by German government, which was the wife of the Biochemistry department head at the university. The lady recommended Sherry to her husband. After conducting volunteering
work in the biochemistry lab for three months, Sherry successfully enrolled in the PhD program there. Two years later, Sherry’s husband moved to the United States where he got a post-doc job at the University of Nebraska--Lincoln. Sherry joined him one year later in 1996.

“Sherry, you often told me that you’re a lucky and blessed person. Sometimes I was wondering whether it was due to that you’re indeed lucky or it was your own perception since you’re easy to satisfy.”

“You’re right. It depends on how you digest those external bless. When you’re not forced or driven to purse certain things because you have to make the ends meet, it’s relatively easy to maintain the inner peace. To certain extent, none of the things that you did was given by God or karma. It takes a lot of planning. Once you decide to do something, don’t be panic whoever long it takes. After so many years, I realize that there are many things that we can’t control. All you can is to do, but not to expect. You can expect, but don’t put too much emphasis on it while you’re doing something, otherwise the results won’t be good. In addition, you also receive influences from the environment. In family, we always believe to be friendly and be generous to others, and then we’ll eventually have the return. I inherited that from my parents.”

“Why didn’t you stay in Germany and come to the States instead?”

“The possibility of remaining in Germany was rare. Germany was a relatively conservative country and pretty proactive of their job opportunities. The United States was a place everyone wanted to come. We felt it’s very free.”

“At that time, if you’re free to choose anywhere in the world you wanna live, where are you gonna choose?”

“I’d choose Paris. Paris is full of culture. There are a lot to do. I’ve been there many times. My goal was that, after graduation, I’d spend a year or two to do post-doc there in order to
read its culture and to know this city. But thinking about the future such as the career and the place to settle, the United States was still our first choice.”

“Was the United States really that attractive?” I asked.

“Indeed. Everybody ended up coming the United States or Canada. I was not that impressive of Canada, the US only. I felt it was sort of between the United State and China.”

“You didn’t think of returning and settling home in China?”

“It seems like after so many years we never seriously think about going back to China. We wanna a place that’s relatively free. You wanna learn something and then get a job outside of the university. It’s time to pharmaceuticals.”

“Was it because the condition in China then was too bad?” I asked.

“It was relatively bad. And the difference was very obvious.”

“You’re talking about freedom. Since you came to the United States, in what aspects have your been feeling more freedom?” I asked.

“Financial freedom…” Sherry was slowing down her speed of talking and thinking.

“That didn’t exist in China?”

“In China, to certain extent, yes, but not related to your mind. There were too many layers to guanxi back home, which were very tiring on the way to purse the financial freedom. Your mind was never free. You had a designated residency and a designated employer. It’s always others choosing me, not me choosing others. Surely in the United States, we’ve also been through the process from being chosen by others to choosing others. But in China you have to have strong networks or background to make this happen.”

“How many of your brothers and sisters are overseas?” I asked.

“I’m the only one of the six who is overseas. They are also doing well at home.”
“How about comparing to you in terms of the overall environment or their life satisfaction?” I asked.

“They’re in their 30s’, 40s’, or 50s’. They all have relatively good statuses in China, and have their own houses, etc. But they seem to be still looking for more and want to do better…”

“Don’t you?” I interrupted her.

“I do, but my pursuit goes into another aspect which is different from theirs. It’s not gonna be something like money or job title, etc. I hope my life could be at a higher level. I’ll continue to make some contribution to the pharmaceutical company. On the other hand, mainly in my heart, I can do something to get more satisfaction spiritually.”

“Where do you get these ideas? Are you born with them? Are they related to your experiences at the church?” I asked.

“I’ve been thinking like this before I go to church. They’re not that related. Now we can talk about the aspects of family and work. When we didn’t have kids or had only one kid, we had to work. At that time we just arrived in the US. To survive, everyone had to work. The education we received also didn’t allow us to stay home. To certain extent, it’s also part of our Chinese culture that the women should go to work like the men, to bring income to the family, no matter it’s for a living or for more disposable income. Sometimes the Chinese can’t balance their family and work after they come to the US. In the long run, it could cause some social problems. We didn’t spend as much time on our kids as those Americans parents. Usually the Chinese family put a lot of emphasis on their children’s education. To certain extent, the expectation we have from the kids reflects the expectation of ourselves imposed onto the kids. At the beginning, I felt I had to work and had to fight for my career like others. We Chinese can not only conduct experiments in the lab, we also have skillsets which are suitable for management. So I also had
some expectation on myself in this regard. Everyone takes a different path. I think I did a smart job in this area. Maybe it’s just a unique idea of mine. When the opportunity came, I caught it. So I was able to move from the traditional lab role common in the Chinese people to the involvement in manufacturing—the later stage of pharmaceutical production. My dream is that when the drug is finished, it is from my hand where it is delivered to the patient. That sense of accomplishment is also a kind of satisfaction to me. I found that getting involved in drug commercialization is also beneficial for my career development, because in this area you won’t see many high-degree holders. But there is still the need. Just the ratio is not as large as that in R&D. But it’s as important and as critical as the early drug development in the whole process of drug production. The problems faced and the skillsets needed at these two stages are different. The later stage is more complicated.”

According to Sherry’s LinkedIn profile, in the course of her career, Sherry worked for five different companies before landing at her current job. The five companies include Abbott Laboratories, Wyeth, GSK, Nucleonics, Inc., and Leading Edge. She started to get involved in CMC and commercialization when she was at Wyeth.

“Was Leading Edge the first company you worked that was founded by Chinese?” I continued.

“Yes. All the companies before that were traditional American big companies. They’re very formal and with established culture and history.”

“What is the biggest difference between them and Leading Edge?” I asked.

“To me, certainly business orientation is different. The traditional big companies have their own products. They own it. Leading Edge is also a good business model, which provides a kind of service. The market demand determines its chance of success.”
“Why did you want to enter the field of CRO then?” I asked.

“It was very simple. The economic condition in the US nowadays is not that good. Due to that, my company closed down. I happened to know Leading Edge from a previous event, so I contacted them to see if there was any opportunity there. In fact, I didn’t really think through it. Maybe it was just a mistake to me. My company closed on March 15. I called Leading Edge right that afternoon. I almost got it on the following day. It just happened to me so naturally and easily. I didn’t even put myself together or evaluate it at all. The feeling then was that, as long as it’s a job, it’s good.”

“Why did you think that way?” I pushed.

Sherry hemmed and hawed, “because the job market last year was relatively difficult. Moreover, I never tried this kind of company before. To certain extent, I was interested in the responsibility given by the company. I always wanted to enter the field of regulatory (affairs) and Leading Edge just happened to provide me this opportunity.”

“Did you feel upset about the closeout of your company then?” I asked.

“Definitely. I didn’t even get out of the shock then. However, I always have confidence in myself. I never think that I can’t find a job. But the opportunity from Leading Edge came really fast. Sometimes humans are just like that. Once you have, you don’t want to look for anymore. Overall, the whole experience at Leading Edge let me see the culture and atmosphere of this type of Chinese-run company. In many companies including those I worked before, it was said that--don’t work for the Chinese boss. The Chinese bosses, due to our cultural background, ability and language to certain extent, can’t compare with those American native speakers. So they compete by using extra hours and extra efforts. The effects of this impression on my generation of immigrants are that, to look for the American dream and to make ourselves become
the white-collar as well, we work extremely hard. And at the same time, we require our subordinates to work extremely hard. This is a common rule. You go to those companies where many people would tell you about his. My priest at the church has told me more than once that Chinese are very smart. But the way you work that extremely hard put yourselves in a position where you’re not supposed to be. The impression you leave for the Americans is that you’re supposed to do 120%. Therefore, when I rose to a management position, I always told myself that I would be nice to my colleagues. I’ll be working as I should do, but I don’t ask people to do 120%.”

“Sherry, after arriving in the country for over 10 years, to what extent do you think you’re the host of this country and this place?” I asked.

“It’s strange that I never thought of this question before. I just feel that I wasn’t as secure when I just arrive as now. In China, the tradition is that, within your families or the environment around, we never have debts, right? You feel secure. Once you have a job, you won’t worry about losing it. It’s an iron bowl.”

“Is China still like that?” I asked.

“At that time it was. When you arrived in the US, you felt insecure. Once you lose your job, you have no food. ”

Sherry then commented that they did a good job in planning their path. She also mentioned that her husband was pretty proud of her because she had been the decision-maker at all the most critical stages for the family. For example, they chose to come to the US right after Germany. Sherry encouraged her husband to apply for Green Card by himself once she arrived in Nebraska, which was approved in three months. They also had a baby during that same year of her arriving. Through conferences, they started to be exposed to some industry practitioners, who
reminded them of that it was time to look for jobs. Not long after that, her husband brought two
job offers back home. Green Card, baby, and job, all these problems facing typical immigrant
families in the United States, were resolved a little over one year after Sherry came to the US.

“And during that time period, I was also very happy.” Sherry commented.

“Really? Do you know what I’m gonna ask next? Did you ever have worries?” I said.
Sherry laughed, “I have many! The more I ear, the higher my position is, the better the
living standards are in my family, the more worries I have. I often ask myself—what am I
looking for?”

“What are you looking for?” I asked.

“I’m looking for a kind of inner peace, peace of mind. But I can’t find it. To certain
extent, I still can’t control my life. Maybe it’s due to the pressure from the environment, money,
or promotion? At least I learned from this time of my layoff experience that the title or the status
was not that important to me anymore.”

I added, “but at that time you cared. I remembered you said a goo title could pave the
way for your future career development.”

“Yes. Because at that time I wanted to become a consultant and a title of VP could make
a difference in my perceived value given by my employer.” Sherry explained, “though I can’t
compare with those consultants in their 60s or 70s with an hourly rate of $500~$1000, I’m pretty
much enjoying my status. What I’m looking for is that I can totally control my time schedule,
where I can put down everything in order to look after my two kids. But so far I can’t, because of
things like planning for retirement and paying off the mortgage etc. These are the things that
we’re worried about, because these are not something that we can get out of.”
“I was wondering, as your family income rises, whether your expense are fixed or swelling along with your income?” I asked.

“Indeed. As the income rises, a structural change happens to the family expense. When you have a relatively less money, you plan for things you want to do and want to buy, which is a very enjoyable process. As you have more and more money, the planning process disappears. It turns to be spontaneous. When you’re out shopping, no matter whether something is actually needed or not, as long as you like it, you buy it. Your psychology changed. I have been discussing with my best friend about whether this change is good or bad. One the one hand, we think that, we work so hard, and then we even have to make plans for the money we earned by ourselves. We’re tired of that. As long as I can afford it, go for it. On the other hand, sometimes you got lost in this process.”

Then our conversation went back to the things that Sherry worried, such as the mortgage, retirement, kids’ education and high tax. She mentioned that the 401(K) was not enough. They have to save for that. Then she commented, “Sometimes how much you earn, to certain extent, is not that related to your happiness.”

“So now in those things you’ve done, which one has made you feel the happiest?” I asked.

“I think I’m a pretty professional type of person. To certain extent, I’m still looking for acknowledge from others. For example, previously when I submitted the filing to FDA, there were always a lot of problems that needed amendments again and again. At present, I just sent in two other projects. I got no negative comments at all. To certain extent, I demonstrate my ability and earn what I’m supposed to do; meanwhile the others can value me and appreciate me. Then this is something I’m happy about. Since I arrived here five months before, I have done five
major projects. Even though sometimes it could be hard, I’m very happy that I did it! I like that moment!”

I commented, “you’re a very career-oriented type of woman. I thought your answer would be something related to your kids or your family, but, see, the thing that made you happiest is your job.”

Sherry also looked surprised by her own discrepancy, “Oh, yeah! ... Yeah…” Sherry was thinking, “on the one hand, I don’t want to give up my career, continuing to make contributions to the human society. But my priority is for my kids. That’s why I chose to be a consultant.”

“Have you ever thought of being an entrepreneur yourself?” I interrupted.

“To certain extent, if I can control the environment, the output and the input, I’d be happy to do that. I tried it before. In fact, being a consultant is also to certain extent of that nature.” Sherry tried to be an entrepreneur in the period after she left Leading Edge and before she landed at her current company. She continued, “There were many difficulties. Sometimes we humans tend to take an easy way out. It’s also good if the others contract something to me. I can control my time and have free mind to simultaneously care for my family and my job. I mainly look for the freedom to arrange activities for me kids. I hope in future the two aspects can be balanced better and better.”

“Is Leading Edge the most painful place you worked at?” I asked.

“To certain extent, yes. Its culture and its philosophy and principle of how to run a company don’t match with my style and principle. I think to be able to run a company you have to learn how to be a person and how to handle interpersonal relationship first, no matter what kind of company you’re running. You have to at least pretend to value your employees. For the kind of company like Leading Edge, it can’t be run well by only one person. Right now
everything is decided by him (Sam). In addition, his subordinates just need to follow what he says, no matter whether it’s right or wrong. Currently it’s in a good condition because of the availability of the market demand. But as a company evolves, it must its life cycle management. It must build its infrastructure, where there is mutual oversight between different departments and they can provide good suggestions to each other. Otherwise, the company can’t sustain. Moreover, For the leadership, before you bring in those high-level, highly educated and highly experienced personnel to this company, you have to evaluate their experiences and assets to see whether they fit your style and culture. This way you not only hold yourself accountable to the company, but also to the personnel. This determines whether those people can perform when they join the company. One can grow well in environment A, but sometimes he can’t do in environment B. What’s more, after you’ve made the decision to hire these people, you should fully value them, appreciate them, and give them trust for them to do their work. Nowadays this company is not like several years ago, when they only had a few people who were doing only one thing, where the strength of one person-the founder could be highlighted. But it doesn’t mean that he knows everything about all the current business models. So you can’t use model A to fit model C. A is a small molecule who can finish eight experiments a day. You can’t ask C why you still can’t finish one experiment after three days. Otherwise it would be very detrimental. You must trust. Since you don’t know about this area and you have hired this person, give him or her freedom to do it and believe in their capabilities to accomplish. Certainly, we humans have emotions. We come in in hope to help you run the business well, while we earn our income. It’s not that the sole purpose of us coming here is to make money from you. That’s not the point. If this kind of relationship wasn’t established well, I think it could be a problem.”

“Is his dictation at his company related to the Chinese culture?” I asked.
“Yes, it is. The Chinese have patriarchism, especially for men. To certain extent, it is said that there are also some influences from the regional characteristics, because our Chinese culture has its regional idiosyncrasies. Also people are different from each other due to factors like family background, etc. But as a leader, he needs to be aware of that. A man can become overbearing when he rises to certain level. This is understandable. But you have to be open-minded. It’s ok to be overbearing as long as you’re open-minded.”

“So you think he (Sam) is overbearing?” I said.

“Yes, he has this characteristic. He doesn’t listen to anything anyone explains to him. He gives us an impression that ‘that’s it! I’m absolutely right! I’m confident!’ He is overconfident.”

“Is it because that his success in running this company has indeed given him the confidence and made him complacent and arrogant?” I asked.

“That is possible as well. That could be a possibility. Another possibility would be that he has been at that position for a long while, where most of his subordinates are Chinese. The Chinese have their own customs and cultures. For example, we’re tolerant and respectful of the supervisors. In my opinion, respect is necessary, but you should be able to tell what’s right and wrong.”

“But he also deals with American clients, who probably won’t buy into this kind of style of his.” I commented.

“When he is looking for businesses, his style is totally different,” Sherry lowered her voice, “This looks tasteless, where he seems to treat the Chinese one way, the Americans the other.”

Then we mentioned again our encounter with Sam in the conference room. Sherry continued with the lowered voice, “That was so rude. Umm…maybe to certain extent it was
because he felt we’re closer to him (than the investors). However, in my opinion, in the working place, even your wife is here, you have to treat her like an employee. Otherwise, the company can’t be run well. It’s not the family style. Maybe you think that way, but I don’t. As an employee, I don’t think that way. His educational background is different from mine, so is our family background. Certainly, I think he is a successful man that he has the courage to be an entrepreneur. However, to sustain this, you have to manage people wisely. No one can run this company alone. You have to manage people wisely so that they’re truly engaged when they work for you. At the same time, you have to treat them well both economically and personally. In my opinion, whether a person can assume a management role is mostly attributed to his gift. Experience is also important. He didn’t have this kind of experience before. He didn’t have much management experience in American companies. The ones he managed were all Chinese.”

“Sherry, do you think it’s an advantage or disadvantage to be a woman in this society?” I asked.

“I feel it’s an advantage. I’m talking about the women nowadays. We have many titles, which are not easy. You’re simultaneously a mother, wife and employee. I feel this is a protected and respected role. To certain extent women are relatively weak. But if you do it well and you have the affinity with kids, people would be amazed ‘Wow! This is a mother.’ You’re nurturing the next generation. So I think it’s advantageous. But often in the working environment, how can I say, the men care about the power. For women, I don’t like power and I like another type of skillset instead. The men can’t treat the women the same way as they do the men in terms of power. If he knows a little bit about manners, he wouldn’t be very violent. So I think women have advantages. For many things the men can’t do, women can. Certainly, in the corporate
ladder, men have the advantage. But that’s not something that I must have. Certainly, it’s good to be at a good level. It’s ok to look for it, but not beg for it.”

Sherry’s current life satisfaction is at 4. And her desire to improve her life is 5. Sherry asked what the two questions meant. I told her it was just survey to get some statistics. Sherry then opened another topic, “Recently I’ve been frustrated by some details in my life.”

“What happened?” I asked.

“I pray every morning that, Sherry, you’re such a good person in your company. Back home, you should also treat your husband well. You shouldn’t be that mad.”

“You can’t control, right?” I interrupted.

“Yeah. Because I have too much expectation on him. I talk to myself, ‘Sherry, you’re a smart person. At home, why you always get mad about something which is unnecessary for you to get mad about?’ I’m very easy to get mad. But I’m better than before. Just recently, maybe it’s due to the two projects at hand, combined with the issues with him.”

“Sounds like when there are too many things in your mind, you get a little overwhelmed.” I interpreted.

“Umm. My husband always looks at my facial expression. If it’s not right, he has even less words. The less the words he has, the angrier I get.”

Then Sherry described how funny the way her husband was trying out her mood. She concluded, “I think it’s extremely important for us to know when something is enough. If you’re always unsatisfied with what you have, you’ll never be happy.”

In the end, I told Sherry that I learned a lot through interviewing people like her. She told me that she had even helped me obtain the permission to interview another colleague at Leading Edge. I was feeling very grateful…
5.1.3 Fighting through Limited Opportunities / Wanna Have a Bigger House

Jim is the Senior Scientific Director in Bioanalytical Services, reporting to Howard, the Senior VP. He is one of the people Sam brought in during the so called financial crisis period. He is the direct supervisor of Mike during his training in the US. Mike had an injury during his working time. On July 11, the Saturday following that accident, Jim invited Mike, me and the other Chinese trainee to his house for dinner. During the dinner, Jim talked about his background in China and family history, when he got very emotional talking about the hardship he experienced during the period of Cultural Revolution in China and how that shaped then his outlook toward his life and career. I immediately expressed my interests in interviewing him during the dinner. On Sunday, August 2, Jim invited me to his house for lunch. And I interviewed him after lunch while his wife was washing dishes in the kitchen.

I first briefly introduced Jim the topics of the interview. He asked me where this interview would finally end up. I told him, “It’s mainly for my dissertation data. But I aspire to put it into a book specifically for the contemporary Chinese diaspora. As for the audience, the first is the academia, while the second is for the Chinese both within and outside of China. I describe people’s life histories both before and after they came to the US and their current statuses and inner worlds. Hope this book can provide insights and inspiration for those who plan to come abroad for study, work or living, as well as those who are currently going through the process, especially those younger people. And I also hope it could be helpful for people in Jim’s generation, like my parents, providing an alternative perspective on how to think about and live their life. Through this I hope to help people live a happier life.” Jim was laughing when he heard this. “Simply speaking, what I care or what I want to know is that whether you’re happy or
not.” I continued. (Jim laughed even harder.) “Secondly, since I’m interested in international business, I want to learn from experienced industry practitioners like you about the history and prospects of this industry, as well as the role the Chinese have been playing in the industry including their advantages and disadvantages. Lastly, I hope you can talk about whether and how the financial crisis started last year has any effects on the industry, the company and you.” I said.

We were quiet for about five seconds, while Jim was thinking. I asked him if I explained clearly. Jim said he had been trying to figure out what was the most relevant information he could provide me, as there were a lot which could probably be put into two or three books.

“What had brought you to a life path of going abroad?” I asked my first question.

“I was sent by the government,” Jim answered. After getting his Master’s degree from Guangxi Agricultural College, Jim remained to work at the same university. During his work there, the Ministry of Agriculture in China allocated the quota of only one person to Guangxi Province to receive government funds to study abroad for one year. Jim was outstanding enough to be selected to be the visiting scholar in 1985.

“At that time, were there many people going abroad?” I asked.

“Very few. Going abroad was like going to the heaven. It’s one out of a million. Especially for the case funded by the government, only a very limited number of people could be sent, because our country was very poor then. It was even worse for the Ministry of Agriculture, because it had little money.”

Jim was in the generation of college students in China who were recruited from workers, peasants and soldiers. This generation is called “Gong Nong Bing Xuan Yuan”, also known as “Worker-Peasant-Soldier Students.” Jim commented that it was difficult for people without any
knowledge of this part of Chinese history to understand these terms, even for his son, not to mention the foreigners.

“Worker-Peasant-Soldier Students” originated from the Cultural Revolution period from 1966 to 1976. The national college entrance examination, opposed by Mao, was stopped after the Revolution broke out in 1966, so was the college recruiting. The process resumed in 1971. Evaluated by references and recommendation instead of college entrance exam, the admission was only open to people with three years or above experiences as workers, peasants or soldiers. The recommendation was based more on the student’s political affiliation with the Communist Party or the class level of his or her family than the academic achievement. Mao’s intent was to give more education opportunities to people in the lower level classes of the society. The generation of “Worker-Peasant-Soldier Students” covers the college students admitted from 1971 to 1976, the last year of Cultural Revolution. The education received from the college then only took 3 years instead of 4, where political study and activities were the main content, according to Jim. The traditional national college examination based recruitment resumed in 1977.

Jim had a strong disadvantage in his education and career in China because he had relatives such as uncles and aunts overseas, specifically in Taiwan. When he graduated from high school in 1965, he was denied the opportunity to go to college, even though he was the most academically qualified student in his class. This experience was very mentally detrimental to Jim’s life outlook, when he almost committed suicide. During the years following that experience while he was forced to work in the countryside under the “Down to the Countryside Movement” starting in 1966, the pain left by that loss of college admission still constantly haunted him, besides the hardship in the living standards. For the latter, Jim described, “We were never full at a meal. We would be content if we could have a meal of meat per week.” At that
time, Jim was still a teenager. In the later part of the interview, Jim also added that he was also deprived of the annual opportunity to be recruited back to work in the city because of his family background.

The “Down to the Countryside Movement,” one of the initiatives during the Cultural Revolution decade, forced senior and junior high school graduates, the so-called "intellectual youths,” to go to the countryside and work as peasants.

Jim also mentioned that, among the people who were forced to the countryside, he was not the only one who lost the opportunity to go to college due to family background. I asked, “Did that make you feel better since you were alone?”

“No one talked about that then. Otherwise it would be considered as anti-party or anti-socialism.” Jim answered.

Jim’s family background had a similar effect when the recruitment of “Worker-Peasant-Soldier Students” started in 1971. But the restriction gradually loosened year by year. During his work in the countryside, with the knowledge learned from the high school and his self-exploration spirit, Jim had helped many peasants in how to conduct scientific farming. With the strong support and recommendation from those peasants, Jim was admitted to college in 1973.

While Jim and I were discussing about the definition of “Worker-Peasant-Soldier Students,” his wife suddenly came from the kitchen and added her opinions for a couple of minutes. Then she returned to the kitchen to wash the dishes, even though I suggested her to join our chat.

Jim graduated from college in 1976. Because of his outstanding performance there, he was selected by his department out of the 90 students in his class and was given the only opportunity to remain and work at his college. In order to receive an administrative position
which was better than teaching position then, Jim needed to join the Communist Party. But his application was declined, again due to his family background. As a result, Jim ended up with a teaching position.

Tradition national entrance examination and admission resumed in 1977, while the graduate school recruitment did the same in the following year. Jim’s family background was not such a big disadvantage for him anymore when the Cultural Revolution ended in 1976. Jim applied for graduate school and took three years to finish his Master’s degree in Agriculture from 1978 to 1981. Starting in 1980, the Chinese government then started to send and financially support a limited amount of scholars to study abroad for a limited period of time such as one year. But as long as these scholars could obtain financial support from other sources to continue their study abroad, they could choose to remain overseas.

Jim became a visiting scholar to the US in 1985. One year later, Jim was admitted with scholarship by the PhD program in Agriculture at Pennsylvania State University at State College. His wife and son arrived in the US in the same year. They had been planning to return to China upon receiving his doctoral degree until 1989, the year when the Tiananmen Square massacre, also known as the June Fourth Incident happened.

Jim said, “to protect the Chinese students, the US government granted permanent residency to all Chinese nationals as long as they chose to remain in the US. At that time, no one chose to go back to China, otherwise you left the impression for others that you were not capable enough to survive or study in the US.” In other words, they would be called losers back home. To certain extent, this impression is still valid even for now.
Another factor for Jim to choose to stay in the US was his son, who joined his dad in 1986. When Jim finished his PhD degree in 1991, his son’s Chinese language capability was already insufficient to compete with his peers in China.

“How do you feel after staying in the US for 24 years now?” I asked.

“My feeling…at the beginning, I felt we’re not the host of this country. I got my Green Card in 1993 and became a US citizen around 1998. But still, I don’t feel I’m the host; instead, I’m from the outside. Other than this, the life here is OK. In the American-dominant companies, we can feel the racial discrimination. But we don’t make a big deal out of that. Instead, we think more about how to adapt.”

“What did you lose and get during these years in the US?” I asked.

“Umm…” Jim paused for three seconds, “I don’t think I lost anything. For people like us, sent by the government to the US in 1985, are the really lucky ones. We were very proud that we were distinguished as one out of a million. My family was also very happy. Few people in my hometown could go abroad. In the whole province of Guangxi (with a population about 47 million), no more than 100 people could make their way abroad. In Shanghai or Beijing, there were many. But the number in Guangxi was very small.”

“So you didn’t feel any difficulty in living in the US at all?” I continued.

“The funds from government gave us the financial security. The salary wasn’t high, but it was definitely enough for us to live. Many Chinese coming to the US had experiences in working other part-time jobs, but I didn’t even do it for one day. My career has been relatively smooth. Moreover, I’m the type of person who likes to keep learning. When I was assigned to study Phytopathology in Guangxi Agricultural College, I was very happy about it, even though we’re not allowed to choose majors by ourselves. At that time, only one out of one or ten
thousands could to go to college. In the commune where I worked, (a commune is like a village,) every year only one or two people could be selected to go to college. No matter which university, no matter what major, as long as one could go to college, it was like going to the heaven.” In my interview with Sherry, she had very similar comments on her experience of going to college.

When enquired of the choosing of his major in his doctoral degree, Jim commented, “Few things I have done are things that I personally have been interested of. You do whatever the government asks you to do. For example, though given the opportunity to go to college, you can’t really choose to go to the one you want.” Since Jim was a farmer before entering the college, he was assigned to study Phytopathology in the college and graduate school. He also taught in the same field between the two educational experiences. Phytopathology was also his major in his PhD degree.

“How did you enter the pharmaceutical industry then?” I asked.

“I was never in a field that I really liked. It was out of my control. But whatever field I entered, I would master it to the level of an expert…”

“So what’s your favorite field?” I interrupted.

“I was very good at math when I was in high school. Since then, I wanted to be a mathematician,” Jim burst out laughing, “a mathematician as famous as Hua, Luogeng. So I say, things that I have learned are not the things I like. The situation then was out of my control. It started to change when I studied Phytopathology at Penn State. As an agriculture major, there’s not much you can do in the US—hard to find funding. But within Phytopathology, there is a division called air pollution, which was very popular in the US then. Only in this division could I find the funding to support my education.”
Jim started to talk about what he did in the division of air pollution, while he noticed me yawning. I told him I was usually a little sleepy after meal. Then he proposed to cook and have some coffee together.

During our coffee break, we talked about the sport of table tennis. Jim has a professional table tennis practice machine in his basement. He has been practicing on it for many years. Now he works at Leading Edge’s Malvern site, where a group of other colleagues often stay after work to play table tennis together in the garage. Jim said none of those colleagues could win over him. After college, Jim didn’t play much sport. But he resumed his exercise routine in 1994, when he was diagnosed with high cholesterol.

Then we resumed our topic on air pollution. Analytical methods are the major tool to study this field. It analyzes the composition of air, soil, water, and plant. He used the same equipment as those used in the analytical services provided by Leading Edge. According to Jim, the field of air pollution was very popular in the 80s, but it lost its popularity in the 90s when he graduated from his PhD program.

Jim explained, “In the early 80s, it was originated from West Germany, where the Black Forest was disappearing because of the acid rain caused by air pollution. It was expected that it would disappear in 20 years. Learning from Germany, the US started in the 80s to make lots of budget for ecological protection including its forests. I started my research in 1986, the result of which was that the effects of acid rain on forests were not that bad. I was sort of proposing a different perspective from the mainstream scholars then who saw the acid rain as a crisis. I used a relatively new and sophisticated statistical method as my tool. At that time there weren’t many people in my field who were very knowledgeable about statistics. The reason why my dissertation passed so easily was exactly that I used that very sophisticated statistical method,”
Jim was very happy when talking about these, “I excel in math, while the professors in my field weren’t that interested in math. So I learned statistics by myself.”

The statistical tool Jim used in his dissertation was called Principle Component Analysis (PCA). He ran the analysis on the statistical software called SAS. Jim said at that time there were few people in his field who were using SAS.

I commented, “Look at you, you detoured, but eventually you completed the circle at the place of your interest.” Jim burst out laughing again.

As Jim mainly adopted the techniques of analytical chemistry in his research at school, he also found a job in that field after graduation. He conducted chemical analysis for environmental protection projects at a company called MPI Research Inc., located at State College, PA. Jim worked there for three years, and then he moved to Ithaca, NY, where Cornell University is located. There he worked for a company that was founded by a Cornell professor, Jack Henion, an internationally recognized leader in analytical techniques such as MS and LC/MS.

As for his development in this field, Jim recalled, “I was majored in this field, everything I know now was learned from him (Jack Henion). I used the same type of equipment at MPI. But at that company no one knew how to use it. I was sent to and get trained for one week at the manufacturing company of the equipment in Toronto, Canada. At that time, I could use the equipment, but my level had not been advanced until I arrived at Jack Henion’s company. He gave one-hour lecture to his employees every week. I worked there for three week, so I also learned a lot. Now I already surpassed him in terms of the actual application and techniques, even though I don’t have his fame world-class. I doubt you can find five people all over the world who can match my level in the area of LC-MS (Liquid chromatography–mass spectrometry), regarding problem-solving capabilities.”
“How come you can claim like this?” I asked.

“I have worked at several labs. At Jack Henion’s company, there were over 30 people at first. Three years later, there were around 100. But when facing really difficult problems, I was the only one who could solve them.”

Jack Henion’s company is called Advion. Same as Leading Edge, it is also a pharmaceutical CRO company. Therefore, upon entering this company, Jim finished his transition from the agriculture to the pharmaceutical industry. Three years later, Jim was promoted to a senior research scientist at another famous pharmaceutical CRO company, PPD, in Richmond, VA. Another two years later, Jim moved to KeyStone Analytical Laboratories, Inc., located in North Wales, Pennsylvania. KeyStone was owned by a Chinese, Dr. Allan Xu. In 2001, he sold this company to SFBC International, Inc., which was further merged with and named PharmaNet in 2005. But Allan remained as the subsidiary president of his own business. Allan Xu had long known Jim, so in 2001 he invited Jim to be his scientific director. Ever since, Jim had been working for Allan Xu until 2008, when he received a phone call from Sam in August, who invited Jim to visit Leading Edge.

Jim recalled, “I didn’t hear of Leading Edge. I didn’t know Sam until last January through Owen, who had worked at Leading Edge. I know Owen.”

Along with Jim, Owen was one of the pioneers in the new area of LC/MS which didn’t emerge in the US until the early 90s. Owen was famous in the diasporic Chinese community, especially the pharmaceutical professional community who met every year through conferences, because he was the earliest Chinese who rose to the management position in a large American company in the 90s, when the opportunity was rare.
By reading Owen’s Linkedin profile, I found that he studied his PhD in Chemistry from 1989 to 1992 at McGill University, the same university as Sam went. During 1997 and 2005, Owen was working for Pfizer where his highest title was senior director. He was laid off in 2005 when Pfizer sold out the division where Owen worked. Then he came to Leading Edge and served as its CEO, while Sam was the president. After two years working there, Owen moved back to China and started to work for one of the most famous multinational pharmaceutical CRO companies in the world—Covance. His title has been Corporate Vice President and General Manager China.

Jim continued his story with Sam, “Sam knows me because I works for KeyStone, which is a highly efficient company. Its lab is not big, no more than 20 people. But its production output is comparable to Leading Edge’s bio group. With no more than 20 people, it has an annual output of more than $9 million, $500,000 per capita. Here at Leading Edge, the per capita rate is around $250,000 for the bio group. Company-wide the rate was $130,000 last year.” Jim was the leading contributor to the technical side of the KeyStone’s operation, while Allan was in charge of the commercial side such as project management and marketing, etc.

“Is the productivity at Leading Edge normal?” I asked.

“I think it is. The case at KeyStone is unique in the world. Allan Xu works hard on efficiency. He is in charge of all the work of five different senior management positions at Leading Edge. And he motivates his employees by giving good benefits and overtime payment.”

When PharmaNet took over SFBC, Allan Xu didn’t quite get along with the new leaders’ management style, who often sent accountants or other representatives from the headquarters to Allan’s division. Allan gradually lost the authority on his own business, previously KeyStone, so he decided to leave PharmaNet, which meant the division of KeyStone had to be closed.
Allan and Sam are good friends. Before Sam started Leading Edge, he worked and learned at Allan’s company for three months. When Allan told Sam that he was leaving, Sam proposed to call Jim—the major revenue-generator at KeyStone. Allan agreed.

When asked why he didn’t go to work for a larger company given his strong technical capability, Jim said that location was a big factor for him, such as the weather and the cost of living. Also, at a large company, when people reach certain, they need to develop a solid to network to sustain their development, which is not easy.

When Sam called Jim to consider Leading Edge, Jim evaluated the company based on the speed of its growth since 2001 and then said yes.

Jim used to tell me, compared with the other labs he worked, Leading Edge was relatively in the category of low efficiency and high intensity. I asked him if there was any way it could be improved.

Jim answered, “I guess it would be very difficult. First of all, it has to deal with its leadership. None of them have ever worked at contract labs before. Sam used to work for a big pharma, so he only knows how a big pharma operates. Before opening his own company, he came to work at KeyStone as a scientist for three months. The things he learned were limited. The rest of the management team just learn from Sam and follow his decision. It’s not easy to make changes, because they don’t know how others are doing.”

“Can’t you tell them where needs to improve?” I asked.

“Not very easy. Why? For example, they need 4 pages of paper to do documentation for a run, while all the other labs need one. The description is lengthy and repetitive. The directors need to sign on every piece of paper. Once something is wrong with one of the pages, all the other pages need to make changes. These are unnecessary. Once this procedure is established and
approved by FDA, it’s not easy to change. They’re concerned about the possibility that FDA won’t approve it, if there is any change made to the existing one.”

“Is this the key problem at Leading Edge?” I asked.

“Not really. There are many other aspects. Here a technician or scientist, no matter how technically capable he is, is involved with everything from preparing samples, running equipment to analyzing data and documenting. A fresh graduate is asked to learn everything in one or two months, while it takes time to develop proficiency in even one of these procedures. It’s almost impossible for them to achieve efficiency. In other labs, the tasks are divided. The personnel develop proficiency very fast. This way the efficiency is high, but for the employee’s personal development, it might not be necessarily good. Both systems have their advantages and disadvantages. But for the efficiency and profitability of the company, a well-defined division of labor is better.”

Three days after arriving at Leading Edge, Jim straightforwardly told Sam that the skills in using LC/MS here were very poor. Jim gave three seminars to the scientists here, based on his experiences accumulated over the years instead of textbooks.

I also shared with him some other problems that I observed in the marketing side of this company’s operation. Then I asked, “are you gonna be happy staying here?”

Jim paused for 3 seconds, “umm…location is still the factor when I look for a job. The reason why I was so ready to come to Leading Edge, was because it’s not far away from my house. And I thought it had been developing very well. After I arrived, I realized it was not as good as I imagined. There are many problems.”

Jim slowed down his voice, “However, for people in my age, where do you wanna go? I don’t move too far. I’m 62 this year. The retiring age is 66. But since I’m in such a good health
condition, I definitely will continue working after the retiring age. I have no problem getting a job at other good CRO companies, such as Covance. I have friends there. But it’s in Wisconsin. It’s too cold and too distant, which can’t compare with the East or West Coast. Boston is also too cold. And the housing is too pricy in Princeton. It would cost me twice to buy the same house as I’m living now.”

“So relatively speaking, Leading Edge is not a bad choice for you.” I commented.

“Not bad, because I mainly look at the location. KeyStone is 9 miles away from my house, while Leading Edge is 17. Whether it’s the ideal? Not really. But it’s good enough. At KeyStone though, everyone listened to me including Allan Xu. But here I need to get the nod from Howard and Jake first, even though I’m more qualified to make the decision. We talk about the hierarchy. I’m not that happy with these aspects. But I don’t make a big deal out of it.”

Then Jim mentioned a story when Howard went to interview for an entry-level scientist position at KeyStone in 2001, where Jim was the director then. But Allan Xu didn’t hire him because of his lack of experience in contract labs. At Leading Edge Malvern site, the Chinese employees there always have lunch together in the lunch room. Jim said now they still joked about this anecdote, where Jim would clarify that it was Allan Xu’s decision, not mine. Jim burst out laughing when he talked about this.

“How do you see the role the Chinese play in this field? Do they have a special advantage or just because they happen to cluster in this field?” I asked.

“The situation is caused by the high demand of personnel. Analytical chemistry emerged in the 90s. It was considered very new and high technology. Americans also learned it. But it was not as fast-changing and exciting as they expected. It was becoming boring for them to run samples every day. They don’t like to this type of work. So there come more and more Chinese.
It’s relatively easier for Chinese for find a job here. The other field in the pharmaceutical industry that abounds with Chinese is statistics. The demand is high. But Americans are not willing to get involved in the boring data processing. So the proportion of Chinese is getting big.”

Earlier that day, Jim mentioned about that, even though he already became a US citizen, he yet felt he was the host here. He said, “there is not much difference for us whether we vote or not. I don’t pay much attention to whatever they debate. We’re not that into politics. We only watch some news.”

“Do you have the same expectation on your next generation?” I asked.

“It’s good enough for them to have a stable job. The family of my son and daughter-in-law already belongs to the higher-level class in the American family, in terms of their income.”

“Do they ever have the concern of being a minority in this society?” I continued.

“They seem not. In addition to Chinese friends, my son has many American friends. He doesn’t talk to me much at home, but he is very expressive in his peers. He started to date girl friends in high school. They’re all Americans.”

“But he ended up marrying a girl from mainland China.” I interrupted jokingly.

“He used to date American girl friends. Every year he had a new one. I asked him, ‘why don’t you date Chinese girls?’ He said the Chinese girl is spoiled rotten and too dependent. So he doesn’t like them. But my daughter-in-law is very different. She is a very outstanding and sophisticated girl. She has achieved a lot in international relations. My son learned from his experiences in dating American girls that they were not reliable. How many of them can genuinely stay with you?”

“Do the parents have any influence on his change of mind?” I asked.
“No, no, no. We barely talk about these with him, barely. Only asked once why he didn’t date Chinese girls.”

“Does the financial crisis taking place last year have any effects on you or your surroundings?” I asked.

“I never worry about it. Given Leading Edge closed out, it wouldn’t be that difficult for me to find another job. The head of PharmaNet told me the other day, ‘if I run into troubles, I have to take you back’.” Jim burst out laughing.

“Is he a Chinese?” I asked.

“American.” Jim answered.

We talked about the marketing of Leading Edge and the recent firing of the Sales VP. Jim mentioned one factor for its difficulty to receive business was that Leading Edge was a relatively new company in the CRO industry, which was not very well-known.

Then I asked, “When on earth did this industry start?”

“The oldest company is Advion, the one I worked before at Ithaca. Its scale was not big, but it started in 1993. The other one was PharmaNet. PharmaNet has a subsidiary in Princeton called Taylor Technology. In 1993, in the field of bioanalytical, they were the only two.”

“Why did this industry suddenly become this popular?” I asked.

“Because it’s highly profitable. The technology and the equipment started in 1990 and 1991.”

“Why didn’t those big pharmas establish their own labs like that?” I asked.

“They also have. But they don’t make money mainly from analyzing samples, instead selling drugs. So their efficiency in bioanalytical is not high. Even though they have many equipment and many talents, the level of their capability is not high. So it’s much easier for them
to contract out the part of the work. In 1993, it cost $200 or $180 to run a sample. Now it’s $50. The cost such as the labor is getting higher and higher, the price is lower and lower.”

“What would be the future prospect for this industry then?” I asked.

“In the future, it first would be in a protection mode. There are still people opening new companies, while some others are bound to close down. There are too many.”

“So what would Leading Edge look like in ten or twenty years?” I asked.

“Leading Edge could be expanding, while someone else is diminishing. There is the balance.”

“But considering those problems Leading Edge is facing, do you have confidence that it would be expanding? Will it be smooth?” I furthered.

“It wouldn’t be smooth. But for many things,” Jim slowed down, “it takes time for the changes to happen. Let me take PharmaNet as an example…” Jim then talked the development history of PharmaNet. It started as SFBC with around 30 people. Starting in 2001, it began to aggressively acquire other companies either smaller or bigger in the North America and Europe. Around 2004, the employees grew to more than 2600. After acquiring KeyStone in 2001, it immediately became a public company issuing stocks. The stock price rose from a few bucks to more than 40 bucks. In 2005, something happened at the company where they recruited several fake Green Card holders for clinical studies. It was exposed by Bloomberg, which rendered the quitting of the chairman, CEO, and president. The stock dropped back to 5 or 6 bucks. But it later rose back to more than 40 bucks again. However, there came a new young female technician scientist. She was said to be good at marketing and soon rose to be a vice president. But she failed to meet the company’s goals for two consecutive seasons. The stock dropped from
$40 to 50 or 60 cents. Jim had their stocks where he lost a lot. Then a private investment company bought over PharmaNet.

When asked about his level of life satisfaction, before giving his choice, Jim commented, “I suffered so much in the past. Now nothing can compare with then. During the eight years in the countryside, I had no hope. The college education was gone. I couldn’t see my future. It was good enough for me to be a community teacher in the countryside. I worked so hard as a student for 12 years. I achieved so much academically. I offered lots of help to the peasants to improve their productivity. Nowadays, no matter how difficult my life is, it’s still much better than my past. As for my family, I can’t complain at all. My son and daughter-in-law are so outstanding even in the American society.” Jim eventually chose 6.

As for the desire for improvement, Jim laughed hardly, “Improve to where? Improve to where? In my whole life I experienced so much and worked so hard regardless of the outlook of my future. I don’t want to waste my life. I always wanted to be a useful person. My position today is also the outcome of my years of hard work. What else would you dream of?” But later Jim mentioned he planned to move next year into a bigger house which was closer to the company. He would like a bigger basement where it’s more convenient for him to exercise and play table tennis. After careful thinking, Jim chose 2 as his answer.

I commented that it seemed like the Chinese were always very interesting in new house or bigger house. I asked, “How do you think? Isn’t the basement big enough for you to play table tennis?”

“It’s enough. But the bigger, the more comfortable. Do you know? My son and daughter-in-law moved to Seattle last March. They bought their house, a big house in May. More than
My daughter-in-law has only been working for 2 to 3 years, while my son 2 months. Their house is bigger than mine.”

“Are you competing with them?” I joked.

“Not competing. In the future, when their kid comes here…” Jim burst out laughing. I immediately understood what he was going to say. Simply speaking, it would be face-losing for him when his grandchildren find the grandpa’s house is smaller than the one they live.

Jim concluded that, “We should have the right attitude toward ourselves and the environment. Even though many things are not that fair, you try your best to do them.” When asked whether he wanted to write a book about himself, Jim had concerns on the lack of readers. I told him that it would be rewarding enough for me to make contributions by recording this part of history.

5.1.4 Learn to Adapt to New Environment Everywhere and Everyday

Yolanda is a lab scientist at the Malvern site. I stayed with Yolanda’s family during my 2008 summer internship. I paid $500 as a monthly rent which included everything. Every morning, Yolanda drove me and her daughter, Joyce to go to work. They treated me like a family member. In 2009, I visited and interviewed the family on Saturday, July 18, on the way back from Sherry’s house. The four family members--Yolanda, the mom, Steve, the dad, Joyce, the daughter, and Jeff, the younger son, were all present. We started the interview right after lunch while everybody except Jeff who went to the basement to play video game, was still in the dining area. Steve and Joyce were on the table, while Yolanda was washing dishes. Steve was the first representative to answer questions.
Graduating from Anshan Institute of Iron and Steel Technology in 1984 with a Bachelor’s degree in Polymer Material, Steve became a faculty member in the same college and had ever since been working there for 9 years. In 1993, same as Jim, Steve was nominated by his university and was selected to join the one-year visiting scholar study abroad program funded by the government. This nation-wide program was also part of the reform and opening-up policy—the Chinese economic reform starting in 1978 promoted by Deng Xiaoping.

Steve said, “during 1984 and 1987, the trend to go abroad had already been formed, even though the access to information in my city was relatively limited compared to cities like Beijing and Shanghai. Everyone wanted to go abroad. For me, I always wanted to continue for advanced studies. It would be even better to get them abroad.” Steve became a visiting scholar at the University of Akron in Ohio. And one year later, he was admitted as a PhD student there.

I asked Steve how old he was when he first arrived in the US in 1993. Steve was ambivalent saying that he was just a little over 30 then. Yolanda corrected him that he was 34 that year. While the parents were trying to recall Steve’s specific age then, I asked Joyce whether she could understand what her dad was talking about. She said probably 50% because it was said in Chinese.

I furthered, “as a typical second generation immigrant, do you have the desire to know about the life history of your parent generation?"

“Yeah,” Joyce answered.

“How about your schoolmates?”

“My schoolmates at Tufts are very involved in the Asian American community. We have the whole Asian American Association.” Joyce answered.
“How much do you know about the experiences of going abroad of your parent generation?”

“Many of them were born here, so…” Joyce started to talk in English here, “I don’t know how involved they are. It’s less trying to get to know the previous generation, but more kind of their identity as Asian American.”

“So it can be counted as a unique identification. Do you ever have the feeling of being isolated?”

Joyce nodded her head as I asked, “Yes, we do. You’re not Asian like you’re brought up in Asia, but you’re not American, either.”

Steve started to laugh. I asked Joyce, “what kind of feeling is it?”

“It’s very common in university. I mean, all of the people that I’ve talked to are only friends of Asian Americans. I think that’s why. I think because there’s no specific identity to either of the groups so they form their own group.”

Steve interrupted, “I think it depends. I mean, it’s not every single Asian. Some Asian people are very social and outgoing. I think…”

“No, no, no,” Joyce interrupted, “If you look at the Asian American, I’m one of the more Asian of the Asian American. There are a lot of the Asian Americans that are born here. They consider themselves American. But there is a gap between, this unspoken cultural gap between them and the American, because ultimately their upbringing is still different.”

We then returned back to Steve’s going abroad story. Steve was very lucky that 1993 was the last year that people could study abroad at the government’s expense. The government stopped doing that, because it was not very effective that people few people returned after the
programs were over. Steve took three and half years to finish his PhD. Right after that, he got a job and started to work in 1998 in the same company as he is working now.

When I told him that I wanted to record the life history of the oversea Chinese like him, Steve started to talk about the dramatic life histories of his generation shaped by the concurrent political and economic events in China. Steve was born in 1959, the heyday of the Great Chinese Famine during the three years between 1959 and 1961, officially known as Three Years of Natural Disasters, leading to millions of excess deaths.

It is said that both the natural and political forces caused the famine, which coincided with the Great Leap Forward movement during 1958~1960. The earlier years of political and economic success of the People’s Republic China established in 1949, led to some more ambitious central planning in agricultural and industrial production, especially of grain and steel. People’s communes, collective farms, took over private cultivation to organize farming. Everyone received the same amount of food regardless of the differences in their actual contribute, so that the farmers’ motivation was low. In addition, the adaptation of the pseudo-scientific agricultural techniques proposed by Soviet agronomist Trofim Lysenko further damaged the productivity of the farmlands. Regarded as one of the key indicators of economic development, steel production was prioritized over anything else. Agricultural labor force and the related production material were hastily transformed into industrial production of steel and iron with very low efficiency due of the lack of advanced technology. With its speed and scale, the dramatic mobilization and reorganization of labor and production materials posed challenges and added problems to social wealth redistribution, where many people like Steve were born with hunger, in addition to the hardship caused by deadly environmental disasters including droughts and floods.
Steve recalled, “everything was difficult to purchase. For one thing, we didn’t have much money. Even for things we could afford, they were difficult to find on the market, because they were insufficiently produced.” Steve mentioned that eating some peanuts was already considered as a precious treat in his family for the Spring Festival—the most important holiday in Chinese culture.

When Steve was 7—time to go to school, the Cultural Revolution broke out and the whole education system was halted in China. The primary school resumed one year later. Upon graduation from high school, Steve became a farmer stipulated by the Down to the Countryside Movement in 1977. That was the same year when the traditional college entrance examination resumed. With his long-held desire for advanced education, upon hearing of this news, Steve started to prepare for the exam by self-studying the textbooks which were untouched in the high school because of the diverted education practices during Cultural Revolution. Steve recalled, “In the daytime, I worked in the field. In the nighttime, I read books underneath the quilt by using a flashlight. Among the over 60 people in my commune, I was the only one who was doing that. No one else was thinking of the college entrance exam. In my high school class of 1977, only 4 or 5 people out of around 600 went to college.” At the beginning of the interview, Steve commented that, “My story is very mediocre. I’m just one of the many.” I reminded him of that comment after he told me his college entrance experience. Steve laughed.

We then talked about his family background and how his parents raised up the five children through those difficult days. Right now Steve’s parents and four other siblings are all in China. In China, the children have the obligation both legally and morally to take care of the parents when they are old. I therefore asked Steve how he saw this problem since they had immigrated here.
Steve slowed down, “Umm…Because I have relatively a large number of siblings, my worries in this aspect are relatively less than usual. I know you are being taken good care of. But emotionally we’re still well connected and are missing each other. I call them basically every week. On my way to work, I’d call them for three to five minutes just to ask how they are doing. So they don’t feel I’m overseas, instead, very close. I’ll go visit them when the opportunity comes. Even though both sides of the parents don’t need us to financially support them, we’ll send them some money from time to time. I’m pretty happy with our current condition.”

Steve admitted that studying abroad away from families and friends was a lonely process, especially for the first 6 months, when Yolanda and Joyce hadn’t come yet. But it helped when he always kept his goals in mind to explore and pursue opportunities at different stages of his life. That kept him going as a diasporic person. That was also part of the advices he would give to the younger generation of overseas Chinese students. In other words, be independent, be strong and be persistent. Steve mentioned he wasn’t that financially flexible enough to visit home on a yearly basis when he was a student, compared to my generation. He therefore didn’t even think about going back home. After arriving in the US in 1993, the whole family didn’t visit back home until July 2001 when they received their Green Card. He explained, “In fact, there are its historical causes for us to able to overcome these obstacles. It doesn’t necessarily mean that the younger generation is weaker than us.” Steve thinks it’s not quite cost-effective to spend thousands of dollars to visit for a couple of weeks, even for those who can afford it. He said, “Try to avoid unnecessary expense. The younger generation is indeed much weaker in terms of financial prudence and thriftiness.”

I asked Steve what was his biggest goal at that time. He answered, “my lifetime goal is to reach the limit in my education. I’m the kind of person who likes to set goals. Not everyone does.
What comes next is my career in the company, which I’m already pretty content with. That’s it!”

Steve laughed light-heartedly.

I further explored Steve’s ultimate life goals by mentioning that of Yolanda’s. Yolanda wanted to own her farm after retirement where she could do some light farming and gardening work. Yolanda, who was still washing dishes, commented, “Mine are the very practical ones. They can’t even be counted as goals.” By hearing that, I assumed that Yolanda probably thought the more intangible goals such as educational attainment like her husband has sounded more like a goal compared to hers. In fact, she was not the only person who expressed that goal among the diasporic Chinese I met in the States.

“How about you?” I asked Steve.

“My goal is to be able to see my son and daughter receiving good education, being capable of making their own living, so that we don’t need to worry for them. In the future, we can have a stable retirement life. Just hope we are able to support them to smoothly finish their education financially or in other aspects.”

Joyce was soon going to study at the medical school. I asked Steve if he had any pressure.

“Yes, we certainly do have pressures,” Steve nodded, “but the way how we live and how we consume probably would never change. I mean, be prudent and thrifty and avoid unnecessary things. During the financial crisis, Americans also realize—don’t buy something you don’t need. Sometimes they do emotional shopping. When you see something nice and pretty in the shop, you’ll buy one. But in fact it doesn’t have much value in terms of the practical functionality. As a matter of fact, this is a problem of balance. You get to have some luxury stuff or entertainment. It’s about how you define which are necessary and which are unnecessary for materialistic or spiritual needs.”
I then asked Steve what were some of those weak moments in the past 16 years in the US. He felt he was pretty lucky that he was always in a very good health condition, and that nothing serious like accidents ever happened to me. But he used to have stress in school here. I then asked, compared to the pressure he had now, which one was bigger.

“I think it was then. Now it’s just on my job. There are many unpleasant moments. The most typical is the relationship with the boss. Not every boss is nice to you. There are politics. Even though we’re not directly involved ourselves, you’re part of that, such as when they want to get rid of a group. Another scenario is that not every boss is knowledge or acceptable of the Asian Confucius’s ideas. They care less about the emotional connection. And people have different personalities. Someone may get mad at you at this moment, and then look nothing has happened in two minutes. But the moment when he was mad is hard for people to accept. I have seen quite some people like that. In the western society, people may get high education and have high status, but they are from the easterners in terms of the emotional connection. The pure Anglo-Saxon Americans who have migrated several generations before may be relatively better. The ones I met are immigrants from the Middle East or the Eastern Europe.”

Steve mentioned that there were not many Chinese working in his company. I asked him, as a Chinese, whether he had the special feeling similar to Joyce’s, which we talked about earlier.

“Supposedly yes. But I think the cause is from the internal, instead of the external. I care more about how to break that division line posed by ourselves. It’s understandably normal to have that feeling, because it’s difficult to fit it when the conversation centers around culture and history.” Steve gave us an example of the legendary news anchor Walter Cronkite who died yesterday. Joyce immediately opened her computer to look for the news. Steve furthered, “if you don’t follow the news, you have no idea what people are talking about, so that you have no way
to join the conversation. But personally speaking, I tend to deal with this kind of situation by trying to contribute and introduce something you know into the discussion without taking it too personally. People also want to get information and learn from you.” Steve gave an example where he went to a baby shower of his neighbor’s. The men there were talking about cars, which Steve was not very into. He joked with the others by telling they were spoiled because in China in Steve’s age the driver was a profession. Steve said, “You let people get to learn your cultural background. We’re curious about each other’s situation. This way the communication is established.”

Steve admitted he also understood Joyce’s feeling. When asked for advice for his daughter, he said they didn’t communicate much on these more cultural and deeper aspects.

“It seems like, when you both come to deal with the issue of cultural difference or identity, you’re more satisfied with your current situation.” I commented.

“No, I’m not satisfied. But I think this is the reality, which you have to have the right attitude to deal with. I’m learning by dealing with it every day. I explore and take every opportunity to learn. This is also my advice for the next generation. Don’t further highlight the circle of boundary. It exists naturally. But the human factors can influence its existence. If you don’t break through the barrier, the worse and worse you’ll feel.”

“What’s your comment?” I asked Joyce.

“When you’re talking about the cultural differences, not so much as your identity is based on your culture or based on what you know about the other person’s culture, your identity isn’t just about what you know and what you do, it’s about like how you’re brought up and everything that you’re taught at home, so a lot of the things are unspoken, it’s not like…I know everything
that the Americans know, but it’s not as simple as just not knowing something.” Joyce answered in English.

“Let me ask you one question,” Steve interrupted also in English, “you think something you don’t, you have totally different opinion on, is that the biggest thing, and then make you think we are so different, or, it’s just the minor thing, it’s not a big deal thing, but just how to break the barrier, just how to…uh…”

Joyce continued, “Maybe it’s an unconscious association of what it means to be Asian, like if I know you’re Asian, then I know that there’s some unspoken thing that I can assume about you, that I don’t have to say it. But if I see that you’re a White person, then I have to assume that there’s something that I have to guard, or something unspoken that you don’t know about me. It would require some type of explanation for them to understand that.”

“Ah, ok.” Steve agreed.

“But much of that probably is assumed. Maybe.” Joyce concluded.

“You keep using the word ‘unspoken’. Will it help if we speak it out?” I asked.

“It’s not something that I can say, it’s definitely this or definitely that, it’s not something like that it’s tangible or that you can pinpoint. Your whole identity is based on from the moment you’re born to the moment that you’re sitting here right now. It’s like a million different things that you’ve got through. And it’s not just something that you can say, just because you know when I was little, my parents taught me to do this. That kind of brought me to where I am. That’s why I’m different from you. It’s the way that your experiences interact with one another.” Joyce answered.

“So what? I mean why you take that as a big deal? I mean I’ve seen a lot of Asian people blend with other people very well.” Steve questioned.
“Yeah, yeah, I agree. If you were to put yourself in a situation where you’re always with White people, yeah, of course you’re gonna make White friends. But when I went to Tufts, there was all of sudden 10 percent Asian population. I saw myself as just being more comfortable without having to pretend or having to try to fit in like you were saying, like having to try to break that barrier.” Joyce said.

“What about if you, supposedly you have a circle to Asian friends, and then you try to make some other friends. Are you conscious about what other Asian people think about you or not?” Steve asked.

“No,” Joyce answered without any hesitation, “that I try to stay away from the Asian American Association, just because of that reason; I think that they’re very exclusive in the fact that even though they try to say that they promote diversity, and trying to educate the whole campus about what it means to be Asian American. I think that in a certain way they isolate themselves, because they’re like, ok, we identify ourselves as Asian Americans.”

“Also it probably depends on personality,” Steve added, “I think Jeff will never have that kind of problem. He will blend very well—everybody is my friend.”

“That’s when you’re little. I think when you learn what it means to be Asian, when you’re in a family, you eat Chinese food, you have your parents who tell you that it’s important to do this instead of…you know, you have different priorities than an American parent would.” Joyce said.

“At what age did you start to realize this kind of feeling?” I asked.

“When I realize that there was such a thing as Asian Americans? Because I grew up in like this all my life with White suburbs White color, and I always thought that, ok, this is the world, so I should try to fit myself in it somehow…”
“You have that feeling?” I interrupted.

“Yeah, my dad also talked about that,” Joyce answered in Chinese and then continued in English, “you know, when you try to socialize or something, it’s hard, right? Because you have to like try to break that, right?”

“Yeah, it’s unnatural.” Steve added.

Joyce continued, “Right, something still not natural, even if you knew everything about their culture, I bet it’ll still be something out of your own like…I think if you…”

Steve interrupted, “I think also it depends a lot on personality. Our family, believe it or not, I don’t know your opinion, we’re kind of a little bit inward person; we don’t like to talk too much, we’re not like, not very socialized person. But…”

“But if you look at, how do you explain all the Asian Americans together at Tufts? Do they all come from like this inward? I think that Asians have a type of homogeneity of mind. And Americans stress that independence of mind,” Joyce commented.

“How do other ethnic groups blend with the White at Tufts?” I asked.

“You know it’s funny, because if you’re going to like a cafeteria, it’s kind of like high school, you see all the Asian kids sitting together, you see all the Black kids sitting together. So I don’t know. I don’t know how the other groups…But I’ve been very immersed with the Asians to realize that if there was the difference, which is why I felt that like I can’t be in that Asian American. I quit seeing about sophomore year of college, because I realize that I wasn’t getting any interaction with other ethnicities. You want to kind of broaden your experience, make more of your experience. I think that there’s something unnatural about just wanting to be with the Asians all the time.”
When I asked Joyce about her opinions on other races, she said, “what I was talking about was primarily White, because Tufts is primarily White. I didn’t really give much thought to other races. I mean it’s a hard thing when you’re talking about race in the America, because you’re kind of assuming that there’s a race that defines America, when America is like the whole conglomeration of all these races. So, I think it’s hard to just…Yeah, it’s hard for me to think. I haven’t really thought about…”

“Or in a very straightforward way of saying it, do you ever experience anything that looks like discrimination?” I asked.

“Discrimination? Yeah! There’s so much discrimination on Tufts campus, all the time!” Joyce affirmed, “It goes on, it’s so politically incorrect to do it, that when it’s done, it’s like god, this is bad. Discrimination is everywhere though. It’s just here, it’s more prominent, because there’s so much more heavier repercussions.”

“I don’t agree. Give me an example.” Steve interrupted.

“Ok. Racial discrimination, religious discrimination goes on all the time at Tufts. Tufts is very liberal. That’s why. It’s a very liberal school. And so what you say, nobody’s gonna be like you’re not being conservative, because it’s cool to speak out your mind. So there’s some sophomore year of; there’s a huge case where our republican magazine published a joke article on how Blacks were admitted to Tufts, because you know they’re not smart enough, they’re less socially accepted...uh…Their socio-economic status is lower. They got in just because of the affirmative action, you know, things like that. The news reporter came to our school, did a story on it. All the surrounding colleges knew about it. So that is just one big case for example. I have like people writing graffiti on the wall against certain religious groups, against certain racial groups. It goes on all the time.”
Yolanda brought the sliced watermelon onto the table, so we all started to eat the fruit and our pace of talking slowed down. In general, Joyce is comfortable in dealing with the differences between her and her parents. And then we started to talk about Jeff, who they thought would be less close to the parents than the elder sister Joyce.

“No, this is because like I come to the point where I can see where it comes from. When you’re little, you don’t have your own opinion on how your parents look at you.” Joyce explained.

“You know what, the media play so much role in this kind of thing. You can’t help, because Jeff always watches TV. He doesn’t care what’s good or bad everything. I think what we should do is maybe just as the American parents to deal with kids. You have to do that, otherwise he has too many American friend kids…” Steve said.

“He has no choice. Who else he’s gonna be friends with?” Joyce interrupted.

“Right. Then he said this kid today has PSP, tomorrow has iPhone, when can I have?” Steve laughed, “We said no, because why you need it?”

“Jeff is nothing comparing to a lot of kids.” Joyce commented.

“I know, I know, that’s because of us.” Steve continued.

“Yeah, so you can’t just be like, just because of that, we’re gonna toss our traditions out…” Joyce confirmed.

“Try to be in the middle. Give him some thinking how to be a person the right way, in the meantime, you know, try to cope with situation. That way make him aware of that I should be a little different from you, I should do something a little different from your American kids. Because I think American next generation is a wasted generation, that’s my opinion. Because the material demand and desire…”

234
“is never ending.” Joyce followed Steve’s words.

“It’s like a black hole. When you have it, you will wanna more. That’s not gonna bring you satisfaction.” Steve and Joyce almost composed these words simultaneously together. They couldn’t agree with each other more.

“That’s American next generation, unfortunately.” Steve added.

“I don’t mean to deny yourself of all earthly pleasures. I’m just saying like…” Joyce furthered.

“So I think we’re not going to give up how to value things, in the meantime, try to cope. Important thing is the ideology. Let them become a useful person is not how rich you are, how many toys, how much materialist satisfaction you can get. Many many kids are spoiled. Not like that, oh my god, if we spend that money, we don’t have things to live. It’s not like that. It’s because it’s not good for you.” Steve emphasized.

Joyce gave another example, “you never sit down playing two hours of video games, and then look back and say, that was a great use of my time. You never would say like after you sit down and do something really useful and spend time with your family, and say I shouldn’t have done that. It’s just like what is going to bring you the most satisfaction in the end isn’t what you want right now. I think that’s the problem here. It’s all about satisfying what you want right now at this moment. That’s mainstream in the American culture and what’s perpetuated in the media. I’m not saying that to deny of everything you ever want. But you have to establish that self-control and self-discipline before you can take…”

“Right, exactly!” Steve stressed.

“Joyce, you see this kind of virtue I mean self-control and self-discipline, as more of a thing that’s characteristic of this family or characteristic of the Chinese culture?” I asked.
“The culture.” Joyce answered.

“Our family is a little more open based on her opinion, and based on my opinion too. Some other parents are even more strict, very absolute, very extreme. You have no any time but study here. Read five books in two months, something like that.” Steve said.

“The parents are very like… If you don’t succeed in your life, you’re a failure. If you don’t go to Harvard, you’re a failure. That’s also extreme—deny everything that you possibly want. You can’t do that.” Joyce added.

I then asked whether Steve, Yolanda and Joyce have consistent opinions on Jeff’s education. Steve laughed, “We’re more consistent now.” Joyce pointed toward Yolanda, showing that Yolanda used to have different opinions from those of Joyce and Steve before.

“There’s no set formula, say, this is the right way. It has to go with the person.” Joyce said. “I agree totally!” Steve echoed readily. We all laughed.

“Yolanda now gives up?” I asked.

“She is very happy now.” Steve said.

“Only this summer,” Yolanda added.

This summer Jeff behaves very well in terms of strictly following the schedule Joyce designed for him.

“What activities are included in his schedule?” I asked Joyce.

“All is just one hour of something, studying, piano, math, something, because he’s so busy with camp.”

Jeff is learning piano from Joyce, who just received a top award in piano at Tufts.
I told Yolanda it’s her turn. She commented based on what she had heard during the earlier conversation with Steve and Joyce, “my expectation of myself is low. Instead I’m easy-going. I go with the family. Once the family is happy, I’m happy.”

Graduating from college majored in Chemistry, Yolanda had been a teacher at a vocational school for 10 years before she came to the United States in 1994, which she felt pretty proud of when talking about it. She was a very dedicated teacher and was beloved by the students. However, she felt she wasn’t a successful teacher for Joyce and Jeff. Yolanda doesn’t think about goals like how Steve thinks about them. She always goes with whatever life has presented to her and tries her best to do whatever she is supposed to do. For example, she didn’t think of going for more advanced studies in the US, as her husband did. Instead, she went to work in restaurant 12 days after she joined her husband in the new country. She wanted the family to financially live better, even though Steve’s income was already enough for them to live. As for going abroad, Yolanda’s main purpose was to give Joyce an opportunity to broaden her horizon. It didn’t mean that much to Yolanda herself, in contrast to the story of Sherry. “In fact I didn’t know whether I could survive overseas. At that time Steve of immigration status wasn’t solved yet. He was still J1. We thought it was impossible to stay here in the long run. Instead we would be back sooner or later. But I wanted to give Joyce every single opportunity possible for her to get exposed to the world outside.” Yolanda explained.

Steve and Joyce were still sitting on the table while I was interviewing Yolanda. I told them to feel free to leave and to do their own things unless they were interested in listening to Yolanda’s story, as I had taken up too much time of theirs. Steve left for the basement to continue editing the video clips he took at Joyce’s piano recital where she received the award. But he told me to let him know if I needed him. Joyce remained.
Yolanda described her experiences working in the restaurant. At that time her English was still poor. However, she saw many things like remembering the dish names as precious learning opportunities, besides earning the income. Therefore, she was pretty happy about her brand new life in the new world because it was meaningful, instead of feeling discouraged or disoriented.

Yolanda summarized that, “even though I don’t have high expectation about my life and myself, every step of mine was a challenge to me. I have been walking upward all the time. Even though I was doing low level job, I always feel I have been walking gradually from low to high step by step, instead of being satisfied with where I was.”

While Steve was in school in Ohio, Yolanda had three jobs—taking care of Joyce, working in the restaurant and auditing English class on campus. Upon graduation, Steve found a job in New Jersey in 1998, so the whole family moved. Steve started to apply for Green Card before he graduated. They got approved in 2001. Yolanda mentioned that Steve is a person who is good at planning and getting prepared for the next stage, which she admires him for. She usually doesn’t worry too much. She just follows him.

Yolanda also found her first formal job at an American company in 2001 with her Bachelor’s degree from China. She attributed her success in finding that job to the encouragement from her husband, “to be honest, I didn’t get formal education in the US. I didn’t have that background. I didn’t even think about of the issue of job hunting. But he had been encouraging me all the time. He said, ‘you should go to look for it. Don’t be afraid.’”

At her first job, Yolanda needed to use GC-MS (Gas chromatography–mass spectrometry) for environmental analysis, which she had to learn to use from the scratch. When asked how she was hired, Yolanda said, “maybe I was just lucky. But I’m the kind of person who catches every
single opportunity. I never give up. As for English, I’m still learning by asking people like my
kids to improve my pronunciation. On the other hand, Steve kept encouraging me. He said ‘don’t
just study English there. You should have no problem finding a job outside.’ To be honest, I’m
really the product of his encouragement.” To prepare for the interview, Yolanda also studied
some theories indicated in the job description by reading some textbooks. This reminds me of
how her husband had studied for the college entrance exam when he was working in the
countryside—very similar self-learning experience.

In recalling her experiences starting with the part-time at restaurant, Yolanda summarized,
“You have to know to catch the opportunity, even if it was the most basic or worst one. You
should cherish it. Each job has its knack where you can always learn something. I always keep
this hope in mind. Like right now I’m working here, I would ask people for things that I don’t
know. Just by simply asking, you probably would receive many things and knowledge out of
your expectation.”

I asked about Yolanda’s job hunting process. She said she didn’t send out many resumes.
So she was very surprised by a call for interview. Yolanda said she was like a fool when she
arrived at the company, where she self-learned everything. Often she only knew the names of the
equipment she operated, without knowing the theoretical rationale underneath. Yolanda’s first
salary was $30,000 a year, which was already a good start for her. The job had a 3-month
probationary period. She was very nervous about that.

Yolanda described, “I was feeling awkward. I had no idea of what to do when I received
my first project. I never worked at an American company. I didn’t know how I was supposed to
do there. It was very difficult at the beginning. How should I ask and who should I ask? But I got
through eventually.”
Yolanda cherished her first job a lot. She mentioned, “This job didn’t pay me that well. But as Steve said, ‘if you study English in school, you have to pay one year’s tuition. You have to practice on the job, like training the soldier. You have to actually do it. You can’t only talk about the theory in class all the time. Theory is necessary. But the actual practice can train you to improve faster.’ Later I told many of my good friends. They were keeping studying in school. I told them to quit and go ahead to find a job. Surely, I can’t tell this to my daughter. She needs it. But for people in my age, my family needs me. I don’t have that much time. I’m the kind of person who cares about the cost-effectiveness. I don’t want to be the burden of others’.”

Yolanda’s father was a famous professor in political economy at the same university as Steve worked at. Yolanda is the youngest kid in her family. During Cultural Revolution, her dad was sentenced to the countryside with a special bad label as “capitalist roader” (a person or group who demonstrates a marked tendency to bow to pressure from Bourgeois forces and subsequently attempts to pull the Revolution in a capitalist direction), because he was an intellectual, one of the targets during the political campaign then. He had to wear a special uniform every day he went to work. Because of that label, Yolanda’s family often got insulted by others. For a certain period of time, Yolanda was a little depressed. She hated her dad for a while and thought her dad must have done something bad. At that time, Yolanda was at the first grade.

Yolanda and her family spent three years in the countryside, where she learned a lot about farming and other things, which she said were very important in shaping her tough personality.

Then we went back to the topic of her career. At this time, Jeff also came out from the basement and joined us. Joyce told him he had to do one hour Chinese and one hour piano today. Yolanda and I resumed. Two years after Yolanda started to work in New Jersey, the family
moved to Pennsylvania due to Steve’s job change. Yolanda also found a new job at MPI in State College, the same company as Jim worked before. But they didn’t know each other until they became colleagues at Leading Edge.

When asked about her biggest regret, Yolanda mentioned that she still felt she hadn’t done enough for and spent enough time with her family, especially the kids—a similar concern as Sherry has. But I think she has done everything she can do for the family.

Then Yolanda talked about her career path again, “while I was working in the industry, I started to realize little by little that the pharmaceutical area was the more promising one.” As mentioned in the interview with Jim, MPI is engaged in both environmental and pharmaceutical analysis. “The career path for pharmaceutical is wider. The environmental side which I did before is very narrow. So I always wanted to gradually transfer to pharmaceutical.” Yolanda added.

We talked about the overlaps between MPI and Leading Edge in the service area. Yolanda said in the bioanalytical services, Leading Edge is stronger than MPI. In explaining that, Yolanda said, “since it (MPI) is an American company, the management style is different. People strictly follow the rules and laws. They won’t work overload. But here we do.” The two trainees from China also mentioned about this. They said the workload here was even heavier than that in China, so that they wouldn’t prefer to permanently work here t given the opportunity.

“How did you decide to come to Leading Edge then?” I asked Yolanda.

“To be honest, I wanted to really enter the bio (bioanalytical) lab.” Yolanda answered, “if I really want to broaden my career path and build up my experience, so that you have more job opportunities in future, you must enter bio.”
Yolanda was introduced to Leading Edge by a friend who knew Howard—the head of bio. And here the equipment she needed to use changed into LC/MS, which she learned from scratch again.

“What was your first impression of Leading Edge?” I asked.

“My first impression…was that I didn’t quite like the environment. In fact, I don’t like the environment where everyone is Chinese. My personality doesn’t quite fit in dealing with the Chinese. From the beginning, I have been working at American companies. When I moved here, I wasn’t quite used to their working and management style.”

“Which aspect? An example?” I asked.

“For example, they always communicate in Chinese, which feels less professional. Moreover, no matter what, every employee should have a phone, everyone should have a computer. Now whenever I want to find someone, I run all over the company. You just won’t be able to professionally make a phone call or send an email with high efficiency. You waste lots of time running on the hallway. The efficiency is too low, while everyone is so busy. But now I’m used to it.”

I asked Yolanda whether she was thinking about changing her job again, since she mentioned earlier entering the pharmaceuticals to broaden her career path. She answered, “Currently not for that long term. Sometimes you’ll have the inertia when you reach certain point. Sometimes you feel the kids and everything else are already on the right track and stable, now I think about retirement soon.” Yolanda laughed loudly.

“How do you think about this industry?” I asked.
“I think it’s pretty interesting. Even though it’s not easy, sometimes you get the sense of accomplishment. Paid low, this industry is relatively better than others. After the financial crisis, it’s good enough that this company can survive.”

When asked the survey question of life satisfaction, Yolanda said, “Looking at my son and daughter, I feel very satisfied.” And she thinks it’s more of an advantage than a disadvantage to be woman in this society, because she thinks women can be taken care by others.

I asked Yolanda if her life satisfaction would be higher or lower if she was still in China. She said, “In terms of living standards, China can’t reach. But I lost something else, such as getting together with the family and the relationship with the parents.” But she is ok with the loss, because after all her family here is well.

As for the biggest pain in life, Yolanda has her opinion, “the pains at different stages are different. Think about it. When you first arrived in the US, you wouldn’t be able to see where you can reach in the future. The pain then was whether we could also gain the permanent residency as others had already done. When you didn’t have a house, you think about how to save money to pay the down payment. When you had a house, you think about the kids and their education. When you have a job, you think about how to do it well, and then how to find a better job.”

5.2 Alternative Modernity: the Idiosyncrasies of China

5.2.1 The Chinese Model of Modern Development

The unprecedented growth rate of China’s economy in the last decade has put this country under the spotlight of analysis and discussion from all over the world. Especially when China surged ahead through the recent global economic crisis, some people are predicting when
the bubble would burst as it had been doomed to. Meanwhile, the others are trying to make sense of the puzzle, posed by “China's strange mixture of state intervention, markets, dictatorship, and efficiency,” so that they can understand and adapt to its success (Zakaria, 2009).

In his book The Chinese Model of Modern Development, Tian Yu Cao (2005) explores the basic elements, historical trajectory, potential and limitations of modernity in the frame of liberalism. He finds that “the basic value of universal emancipation of individuality, which has embodied the ideals of the development of humanity and of human emancipation, along with the notion of critical rationality based on these values, has endowed liberal modernity with great potential for self-improvement, which is clearly vindicated by the improvement of human and civil rights, the development of social democracy, the construction of the welfare states, the abandonment of imperialist and colonialist polices, the self-reflection on and self-criticism of past and present situations, and the pursuit of social justice and global justice” (p.296). Under the resource-based approach, it is the reflection of the self-organizing nature of human activity systems as we develop conscious evolutionary strategies and design normative imperatives that integrate individual human emancipation (including the physical, mental, and spiritual needs of human beings) with an informed understanding of evolutionary dynamics in our societal and natural environments to guide the sustainability of our humanity (Laszlo & Laszlo, 1997).

Cao also clarifies that “the first prerequisite of liberalism is that private property, as the basis of individual dignity and moral responsibility, is sacred and inviolable. Any type of violation, even one that stems from the public will be formed through the democratic process, is considered immoral and intolerable” (Cao, 2005, p.296). He argues, however, reforms and improvements in liberal modernity can at best redistribute national income, but cannot control the production. The key elements of production have been far early unfairly distributed and have
now been taken for granted as private property of those who have richly had them. Therefore, this structural inequality has been eternized, and the correction of which would be seemed as violation of humanity by those existing owners, usually those already advantaged in the society. This further confirms the view of the resource-based systems approach to globalization that resource inequality is reinforced by human intervention driven by cultural necessities of disparate or inherently conflicting value systems (Childe, 1956).

Even though market liberalism provides the best mechanism for information processing required by the division of labor for economic cooperation, the information entering the market is not systemically symmetrical to all parties involved, as the pre-existing market relationship itself is unsymmetrical. This makes it possible for exploitation and domination to occur within enterprises and to take shape through the seemingly rational contract relations in the labor market, and the distorted expression of the vitality of the market economy at the cost of ecological destruction and social instability. The same exploitation, domination and distortion, even exist in the “fair” rules of WTO and other international credit organizations, making the achievement of real social justice globe-wide also difficult (Cao, 2005).

Moreover, the market requires only a system of legal protection, not necessarily a democratic system. Usually, the political indifference accompanied by the greed and fear of market competition, and the radical mood caused by polarization, are not favorable to the construction of democracy. Cao (2005) concludes that the ideology of neo-liberalism, which asserts that the market is the embodiment of rationality, democracy and justice, lacks theoretical justification.

The Chinese model of modern development is defined as “in the context of globalization, participating actively in the integration of a global market with…a firm socialist-oriented
national stance, as a special national actor” (Cao, 2005, p.3). It can also be called “market socialism” or “socialist modernization.”

With the same emphasis on the development of a critical rationality that judges all things and behaviors in terms of ultimate ends, the Chinese model, is theoretically different from liberal modernity in that, it aims to correct any current arrangement that prolongs those taken-for-granted inequality and injustice, by institutional control of production and distribution of social wealth. It also takes advantage of the efficiency brought by the clear property rights in the market system, while innovatively separating management from ownership learned from Western enterprises. Therefore, state ownership assuring democratic control of production forces, and professional management featuring clear use of property rights and efficiency, can coexist under this model (Cao, 2005).

Market competition ultimately causes social polarization. What should a socialist market economy do to counteract or minimize this effect? It applies (Cao, 2005) compromising “market competitiveness” with “efficiency of the system,” such as establishing labor-intensive enterprises for the protection of employment rather than for mere profit or economic growth, reducing working hours and averaging employment. In this way, the well-being and sustainability of the socialist market economy provides the ultimate legitimacy and overall efficiency against the volatile free market economy, even if the competitiveness of some individual enterprises may not be as great as the best ones by standards of the free markets. My proposition of the resource-based systems approach follows the same logic that the efficiency of a system’s organizing dynamics in terms of resource exploration, allocation, utilization, and redistribution should be the measure of value in assessing human achievement. That system could be the global society,
a nation, an institution, an industry, an ethnicity, an organization, a community, a family or an individual.

This is different from Pareto efficiency, even though it holds that the change in allocation makes at least one person better off without making any other worse off, because Pareto improvement assumes the initial arrangement of goods among a set of individuals, where inequality and injustice may have already existed (Cao, 2005). Therefore, Pareto efficiency does not necessarily result in a socially desirable distribution of resources that optimize the overall well-being of a society (Barr, 2004).

The Chinese model of modernization has clear traces of its particular history, culture, tradition, as well as a nationalist tinge (Cao, 2005). The great expansion of transnational capital in the age of globalization is accompanied by the control of the rights to making and interpreting the rules of the game in international economic life. To a large extent, the attractiveness of China to foreign investment, lies in its huge market and cheap labor. Few capitalists have the luxury or are not afraid, to help Chinese counterparts grow economically strong enough to be their competitor. Therefore, China has to participate in globalization with a clear sense of national identity and with a goal of developing domestic economy while interacting with transnational capital. Here, nationalism, has gone beyond the anti-imperialist and anti-feudalist forms in the May Fourth Movement, as delineated by Cao (2005) along the historical milestones of China’s seeking for its model of modernization (p.297):

“Since the Opium War when the Western powers forced China to open its doors, China…has been seeking a path to modernity which is different from that taken in the West. However, what is expressed in On Great Harmony by Kang Youwei and Sun Yat-sen’s The Three People’s Principles is the basic demand for equality and modernization in a nationalist sense. The ‘May Fourth Movement’ which advocated democracy and
science against imperialism and feudalism showed its liberal colors through its goal of ‘opposing-the-West-to-join-the-West.’

Because the success of the October Revolution in Russia opened up a new path, political development after the May Fourth Movement created a new historical tradition, i.e., the victory of the Chinese revolution in 1949 and the following thirty years’ theories and practice of Mao Zedong. Mao Zedong critically inherited the historical traditions of egalitarianism, nationalism, and etatism, grafted Marxist ideology, Leninist party structure, and Stalinist ideas and practice concerning the construction of socialism on to China and nativized them, trying to break a path to modernity of China’s own, different from those in the West or the Soviet Union. This path was eventually rejected and abandoned due to the failures of the Great Leap Forward and the Cultural Revolution.

Deng Xiaoping’s modernization project is a new stage along the Chinese path. Deng Xiaoping inherited Mao Zedong’s etatism and nationalism, although he also tried to practice them in a less doctrinaire way, with more individual freedom and tolerance for social activities, and with communication and cooperation with the West in the fields of economy, politics, culture and military. But Deng Xiaoping’s originality lies in his abandonment of the planned economy, the basic tenet of Mao Zedong and traditional socialism. He took the market system as the underlying institution for China’s economic modernization, while at the same time trying to bring the market economy into the framework of socialism. Thus he introduced an alternative modernity that is different from liberalism as well as from traditional socialism.”

Although theoretically sound and practically having gained significant success, such as the rapid economic development and the relatively stable political condition, the Chinese model of modern development also faces many obstacles and challenges (Cao, 2005).

For example, first, the monopoly system left over from the planned economy still exists in the current market causing unfair competition.
Second, supported by transnational capital, the ideal environment for investment under neo-liberalism sacrifices the environmental and labor interests and depletes limited natural resources. How to exert macro-control to endure the pressures from the neo-liberal ideology and to sustain long-term development needs to stand the test of time.

Third, even though the political environment is opening up and relaxing, and democracy as the core value of political culture has been reinterpreted and acknowledged; under the surface of stability, suppression of democracy and the concealment of social contradictions have yet extinguished.

Fourth, the institutional corruption can hardly be contained by policies and decrees. Broad supervision by public opinion and authoritative supervision by the masses is waiting to be further encouraged.

Fifth, market economy structurally depends on the capital investment and entrepreneurship spirit. However, socialist state capital and its equal distribution of profits fall short of generating interests among investors and collecting necessary investments for projects such as research and development for the new advanced and high-tech industries and new trades for the creation of employment.

Sixth, even though the operation and ownership of capital have been separated, it is still hard for the entrepreneurs to be persistent in the socialist ideal and resist the allurements in the materialistic and consumerist atmosphere within the market economy. An unreasonable incentive system may very likely shape them into another exploiting class.

Nonetheless, Cao (2005) concludes that “the biggest failure of Western liberal democracy is that the procedural democracy that was legally fairly designed has no meaning for people whose economic status cannot allow them to exercise their legal rights” (p.314). Meanwhile, the
Chinese model of development which considers both instrumental and critical rationalities, “may be regarded as the first sign that an alternative modernity is entering the world” (p.317).

5.2.2 Foreign Direct Investment (FDI)

By this point, we could tell that the various forms of FDI involved in my broad research context also demonstrate idiosyncrasies. Besides access to other resources, an international SME’s social tie with and legitimacy at the fast-growing economy such as China, attracts investors from both the host and home countries. Regardless of the origin of the funds, the investment can also simultaneously enter more than one market, leaving vague the conceptual boundaries between inward and outward FDI.

In explaining SME’s success in accessing finance, Penrose suggest, “if the rate of growth of the economy remains at a high level, the proportion of the total opportunities for investment that the large firms will be able to take advantage of will fall, and the smaller firms will then find the scope for their own expansion widened in the absence of restrictions on their ability to expand into the interstices” left by large firms (Penrose, 2009) (p. 199-200).

Therefore, for policymakers, to attract FDI, they should design programs to assist their service targets in cultivating networking opportunities and establishing their legitimacy in the market where opportunities abound. In my research context, the Chinese government’s endorsement of the networking events in exploring and integrating transnational social capitals such as SAPA is a great example.

5.3 Discussion
Though with cultural heterogeneity and historic idiosyncrasies, one commonality identified among all my informants is their learning attitude and entrepreneurial spirit in facing the gains and losses of opportunities and control of resources. This adaptive mentality, I believe, as part of their cultural necessities of their systems, may collectively reflect the historical trajectories of the system of Chinese culture. As told by this history, the Chinese culture is prone to accommodate differences and changes and innovate synergistic relations among them. This is done through self-exploration of structural responses to constraints and loss of control to increase the overall coherence and efficiency of the organizing dynamics of its system. To certain extent, the idiosyncratic ideology and process of China’s economic and social development may have echoed the accommodating and innovative characteristics of Chinese culture. The market socialism, comprised of both market and institutional control of the production and distribution of social wealth, currently invented and adopted by China, is such a try in its seeking its mode of modernization. Under this model, transnational social capitals in cultivating networking opportunities and establishing international legitimacy is key to the FDI both inward and outward China. With numerous deficiencies to be addressed, this model, however, is still under refinement. So I suggest, compared with the current political and economic systems of China, Chinese culture, in lending its efficiency in organizing world resources beyond national borders, might shed more light on the contemporary rising of China on the world stages.
CHAPTER 6: GENERAL DISCUSSION

In summary, as an interdisciplinary attempt to explore and demonstrate the complementarity of natural and social sciences to achieve synergy effects in the contemporary global scholarship of humanistic social and behavioral sciences, this dissertation proposes a resource-based systems approach to the study of globalization and organization. It is built upon the principles of organization, which in essence refer to a natural system’s evolutionary capabilities to self-organize in terms of reducing its internal entropy or increasing the efficiency of its organizing dynamics—the principle or self-organization.

6.1 Resource-Based Systems Approach to Globalization

Thinking of how to operationalize the measure of the efficiency of organizing dynamics for systems under the impact of humanity and to apply the principle of self-organization to the development of global ecosystem and its subsystems to enhance their well-being and sustainability, I suggest that the behaviors of various social players and their interacting dynamics as demonstrated in various social forces are organic components of the global social societies (Burt, 1992), whose sustainability hinges on its systemic efficiency in organizing resources. Then I start the search from ultimate reality regarding the cause of perturbations in our global ecosystem or constraints on its way to self-organize and sustain throughout the history of the development of humanity, which I think is world resource attenuation and inequality as well as their interactions with human perceptions and behaviors where rationality is bounded by cognitive and affective limitations (Simon, 1991).
As a result of human bounded rationality, two types of necessities are brought into play in shaping the dynamics and directions of the evolution of human activity systems: one is cultural, which is given through the subjective value-system of each evolving community; the other is environmental, which is reflected in objective realities (Parsons, 1971). The cultural necessity has more shaping power than the environmental one, which develops into the mechanism of satisficing—choosing the one that make them happy enough instead of the optimal—in decision-making (Simon, 1991). Therefore, the resource-based systems approach calls for a simultaneously critical and normative exploration of the relationship between our perceptions and conceptions and the worlds they purport to represent” (Laszlo & Krippner, 1998, p.4). It also advocates a proactive and practical orientation that humans should develop conscious evolutionary strategies and design normative imperatives that integrate individual human emancipation (including the physical, mental, and spiritual needs of human beings) with an informed understanding of evolutionary dynamics in our societal and natural environments to guide the sustainability of our humanity (Laszlo & Laszlo, 1997)

The principle of self-organization defines learning as “the conversational construction of personally significant, relevant and viable meaning” (Harri-Augstein & Thomas, 1991, p. 6). This definition of learning not only applies to an individual’s living of his or her personal life, but also the living, working and/or playing of a group of people collectively, in other words, the building of communities or identifications. Human know-how and feel-how are taken as an ever expanding resource for an individual, a group, or a community to gain coherence and evolve. Therefore, I suggest life satisfaction might be a more important factor than material productivity to measure the efficiency or health of a system or to assess human achievement (Capra, 1989).
When cultural necessity and environmental necessity are in sync, human actions and activities are compatible with the system’s organizing dynamics and evolutionary direction through the effective processing of environmental information and efficient exploration of various structural responses to future uncertainties and constraints (Laszlo & Krippner, 1998). The accumulation of working processes the exploratory efforts from each individual collectively construct as they harness their gradient—perceived inequality, becomes the "learning", "organization" or "design" of the system as a tangible artifact—the engineering of a system that is capable of presenting self-organized behavior. Scientific, technological and social innovations, as emergent properties, take shapes in the patterns of and transform the organizational structures of systems such as culture, nation, economy, institution, community or organization (Bejan & Lorente, 2006; Camazine, Deneubourg, Franks, Sneyd, Theraulaz, & Bonabeau, 2003; Henshaw, 2010; Sen, 1970). Formation of institutions such as myths, religions, philosophies, art-systems, or semiotic consumer behavior then generally performs or actualizes the transformative processes and entities (Lidz, 1982; Robertson, 1991). This is a demonstration of the transdisciplinary paradigm of the resource-based systems approach to holistically theorizing globalization and organization of human activity systems and its potential to lead us to find “truths supposed to be above the flux of history—something more fixed and universal, permanent, and reliable as a guide to action than the particularities of history can of themselves disclose” (Lacey & Haakonssen, 1991, p. 7).

According to this approach, globalization is therefore viewed as the emergent pattern of the resource organizing dynamics of the global ecosystem including human activity systems and their wider context of life support systems. For systems at the global level, global integration and its seemingly homogenizing effect are the strategic structural responses to the constraints and
uncertainty caused by attenuation and inequality regarding world resources. These systems’ self-organizing nature—minimizing constraints/uncertainties and increasing efficiency/coherence of their organization—directs their operating evolutionary strategies: transnational collaboration for more efficient resource production, worldwide coordination for more equal resource redistribution, as well as international cooperation for more effective solutions to social, environmental and technological problems resulting from natural disasters and human interventions that is bounded by human rationality.

However, the globalizing patterns of the global ecosystem are the emergent properties on the level of whole ensemble, which might not necessarily characterize the organizing dynamics of its constituent subsystems. For systems whose boundaries are defined at the regional, national, institutional, industrial, organizational, ethnic, communal, familial and individual levels, they have different resource composition in terms of tangible/intangible or natural/social resources and interactions with their respective surroundings. To demonstrate their self-organizing nature toward efficiency and coherence, they might carry out varied operating strategies in terms of structural changes on their paths to evolve. Their paths might be featured with uniqueness, heterogeneity, diversity, divergence or decrease in complexity. Then these idiosyncratic features or emergent properties, as they showcase the systems’ evolutionary capabilities that contribute to their self-organized behavior, become a type of resource.

Depending on the role human agent plays in organizing each of these system, alternatively, how culture is codified (Parsons, 1991), their cultural necessities—the imperfect and irrational side of human mind—could be disparate or in inherent conflict with each other. Different cultures form different strategic responses to the different evolutionary needs that are specific to each system and thus represent different evolutionary paths to self-organize and
sustain. Therefore, an indifferent approach to homogenizing or integrating divergent cultural necessities and goals may end up with more constraints to systems’ well-being and sustainability. Instead, a modified convergence that could accommodate difference and divergence and innovate synergistic relations is suggested, as featured in the system of Chinese culture.

Cultural systems are different from social systems. The latter is the real pathfinders, who embody the normative patterns of the organizing dynamics of the human activity systems at a particular time and space. Cultural systems, however, have an independent power of transition, either as components of actual social systems or as cultural bases that may spread across social systems (Parson, 1966).

Therefore, culture is different from cultural events. It is a living system construct that transcends the temporal or spatial constraints, which are otherwise typical for the agglomeration of social systems at the economic, political or national arenas. (Nelson & Winter, 1982b). Within a given time and space, culture is a much more stable concept subject to less mutability (Huntington, 1993). As the DNA of human activity systems, culture encodes the historical trajectories of their evolution. Representing the strategy component of the evolutionary capability of human activity systems, culture reflects the degree of efficiency of the resource organizing dynamics of the systems and therefore speaks to their well-beings and sustainability. For systems with high efficiency, the uniqueness or idiosyncrasy in their cultures can also be taken as a type of intangible resource because of their competitive advantage in evolution.

6.2 Resource-Based Systems Approach to Organization

The resource-based systems approach to globalization is in essence an approach to theorizing the nature of organization in any human activity systems.
Under the resource-based view, resource has an integrated connotation of energy, mass, information or anything of value to the existence of the system. In theorizing the resource-based systems approach to globalization and organization of human activity systems, resource broadly refers to anything of value for the use of the global ecosystem and/or its constituent entities and processes to evolve and sustain including various dualities such as tangible/intangible and natural/social resources. The value-creation in human activities comprises social resources, for example, information, knowledge, intellectual property, innovation, technology, patent, idea, time, credit, trust, social capital, power, competitive advantage, happiness, satisfaction and human labor, etc. Though relatively intangible comparing to physical and material resources, they contribute to the efficiency and coherence of the organizing dynamics of human activity systems in both the individual and collective senses.

This definition of resource bridges the resource-based view (Wernerfelt, 1984) and the knowledge-based view of the firm (Grant, 1996; Spender, 1989). With the definition of a resource-endowed unit or system (Penrose, 2009; Rubin, 1973; Wernerfelt, 1984), the various frameworks of firm theories are all integrated under the resource-based system approach to organization governed by the principle of self-organization (Burt, 1992; Grant, 1996; Nelson & Winter, 1982; Penrose, 1959; Spender, 1989; Wernerfelt, 1984).

Under the resource-based systems approach, the firm exists to innovatively transform the gradient between its organization and the environment (the market) caused by inequality regarding access to resources, especially tacit knowledge. The transforming efficiency hinges on minimizing the cost of resources associated with knowledge transfer, which would otherwise become the constraints to the firm’s well-being and sustainability. The immobility, uncertainty, and incoherence associated with tacit knowledge become such as constraint (Grant, 1996). As
the practice of organizational learning and innovation driven by the self-organizing nature of the evolutionary system of the firm to gain efficiency of its organizing dynamics, the normative elements institutionalized in a firm’s operation such as rules, routines, hierarchies, and directives, etc., serve to transform the uncertainty in the microscopic structure of the firm where meaning cannot be communicated coherently (Parsons, 1982), according to the resource-based systems approach to organization.

Through routinization (Autio, Sapienza, & Almeida, 2000), the immobility of tacit knowledge and the resulting idiosyncrasies associated with the organization who carries the tacit knowledge, are reinforced and embedded into organizational memory over time, shaping a unique and firm-specific configuration of firm resources in forms of capabilities and competences (Dev, Erramilli, & Agarwal, 2002; Dierickx & Cool, 1989; Nelson & Winter, 1982b; Nonaka, 1994; Wu, Sinkovics, Cavusgil, & Roath, 2007). The uniqueness in the logic of governing certain types of economic activities that is very different from that of a market becomes the firm’s competitive advantage that builds and sustains its evolutionary capability.

Idiosyncrasies in an organization could be demonstrated through the composition and organizing dynamics (in terms of exploration, allocation, utilization, and distribution) of its capital and human resources, the entrepreneurial and managerial competence of the entrepreneurs in terms of their visions and insights on the relationships between their organizations and the market, as well as the personal disposition or cultural necessity of individuals that encodes one’s unique life history.

These are particularly crucial for international SMEs and transnational entrepreneurship to overcome and transform their liabilities of newness and smallness. Connecting this to the study of globalization, Stohl suggests that “the dynamic structuring of globalization is a
culturally saturated process that can be better understood by focusing not only on the constraints and demands of the global environment but also on the meanings, interpretations, and sense-making activities that constitute multinational organizing” (Stohl, 2001, p. 326). When the life of individuals who actually perform those sense-making activities in an organization are collectively analyzed as a system of certain culture with common historical trajectories, there lies an opportunity for us to see how culture travels across time and space and presents its self-organized behaviors in transnational entrepreneurship.

These uniqueness or idiosyncrasies, however, are not about physical attributes of a firm, whose activities inevitably requires interactions with the various interlocked social systems comprising the social network where the firm is embedded. Its competitive advantage rendered by those uniqueness or idiosyncrasies is actually demonstrated through securing productive relationships” (Burt, 1992, p. 190) with other resource-endowed systems such as the market, customers, investors, talents and regulatory agencies, etc.

These relationships ensure favors in terms of information, timing, referrals, and control, increasing one’s efficiency of organizing dynamics. The access to these resources would otherwise be constrained by uncertainties in human activity systems where bounded rationality and imperfect competition are the norm (Simon, 1991). These favors, also known as interpersonal debt or trust, therefore, become social resources, more accurately social capitals.

For players who are not connected by such relationships in the social network, holes form around them. “Those with relationships free of structural holes at their own end and rich in structural holes at the other end” (Burt, 1992, p. 45) are structurally autonomous players presenting self-organized behaviors. They have more negotiated control than others when navigating through the social structure and interacting with constraints. Structural holes in the
social network therefore bear entrepreneurial opportunities for them to transform the gradient caused by inequality regarding access to resources. Social organizations or institutions form as a strategic response to those opportunities to transform the constrained relations and negotiate for control. When this happens at the individual level, formation of personality takes place. Under the resource-based systems approach, personality is therefore viewed as the emergent pattern of an individual’s value system whose structure serves as a strategic response to the incoherence in understanding relations with its environment and the sense of losing control (Lidz, 1982; Parsons, 1982; Robertson, 1991). The various relationships established in the social structure also define one’s identity. Identity crisis results from the search for or dearth of meanings (Taylor, 2005).

Various identities emerge as the patterns of each of those relationships or interacting dynamics one establishes with the social groups or institutions, as it navigates through the structural constraints in the social environment (Burt, 1992; Lidz, 1982; Robertson, 1991). To stay coherent and organized while dealing with various constrained relationships with the environment and understating their meanings, one constantly negotiates between the idiosyncratic cultural necessity of one’s value system and the normative necessities from the environment. As a compromise between its self-organizing nature toward the optimal outcome and the cognitive and affective limitations, the mechanism of satisficing takes effect in responding to the conflicts during negotiation (Simon, 1999). Satisfaction arises when one is represented by identities that align with its value system or personality and give coherence to the meaning in living its life. Then it chooses to reinforce the relationships represented by those identities through performing the normative imperatives required by the corresponding social groups or institutions. Consequently those identities assume salience in one’s general self-representation in the social environment.
The resource-based approach to organization of human activity systems suggests that life is about navigation through complexities and uncertainties in our environment that constrain our well-being and happiness. It is about learning not only the environment but also our relationships with the environment, and negotiating to the best of our knowledge for the coherence and sense of control that are essential to our well-being and sustainability while exploring structural responses and adapting to the constraints in the environment. It sees the spirit of entrepreneurship as the willingness to learn and to change. Such spirit reflects the efficiency of the organizing dynamics of life as an evolutionary system in terms of exploring, allocating, utilizing and redistributing resources both internal and external. Therefore, the spirit of entrepreneurship represents the evolutionary capability of a system’s self-organizing nature and is key to the well-being and sustainability of life.

6.3 Implication for Policy-Making

Nelson and Winter (1982b) hold that “the ability of a theory to illuminate policy issues ought to be a principal criterion by which to judge its merit” (p. 372). The resource-based systems approach advocates a proactive and practical orientation that humans should develop conscious evolutionary strategies and design normative imperatives that integrate individual human emancipation (including the physical, mental, and spiritual needs of human beings) with an informed understanding of evolutionary dynamics in our societal and natural environments to guide the sustainability of our humanity (Laszlo & Laszlo, 1997). This approach suggests that human value is demonstrated in accumulating knowledge in creating and designing entities and processes that can help us transform those constraints or our interactions with them to increase our degree of self-organization. Those transformative creations and designs, be they scientific,
technological or social innovations, as the emergent properties of various human activity systems, grow our evolutionary capability or competence.

Therefore, capturing and understanding innovations emerging from the evolutionary dynamics of human activity systems should be at the center of the policy-making and decision-making at the relevant system levels. This has been the focus of systems analysis of globalization and the transformation globalization has brought at the various constituent levels and dimensions of the global pharmaceutical industry.

The changes and ruptures that have embodied the dynamic evolution of the global pharmaceutical industry and how the government and public-policy arena may respond to them, have long been anticipated by Nelson and Winter. They think (Nelson & Winter, 1982b),

“The point of view on market failure, and limits on government action, in industrial R&D lent by evolutionary theory is not totally divergent from that which would be lent by positive orthodox theory. But the emphasis is different. In the first place, the current state of uncertainty regarding the range of things that can be done, and the consequences of doing various things, is stressed. Second, no attempt is made to define an optimum policy; rather, the style of analysis is to try to identify policies that should be avoided and others that appear more promising, and to focus attention on the latter. In part it represents carrying over to the arena of policy analysis our explicit recognition of bounded rationality. In part it represents a more general acknowledgment that notions like ‘market failure’ cannot carry policy analysis very far, because market failure is ubiquitous. Finally, it involves an explicit recognition that governments are quite limited in the things they can do well, and that therefore policy analysis should be concerned with these constraints as well as with the inefficiencies of private action. Third, flexibility, experimentation, and ability to change direction as a result of what is learned are placed high on the list of desiderata for proposed institutional regimes” (p.394).
In fact, the third point make above that has characterized the path of the social and economic development of China and explained the reasons for its idiosyncrasies. As the authors further hold, “over the long run the cumulative result of private and public actions and reactions is a gradual modification of the basic structure of society” (p.22). The goal to self-organize and to achieve systemic efficiency may put restrictions on the satisfaction of the individual subsystem as measured by its own cultural necessity, when such necessity needs realignment with that of the whole ensemble. This is also when the principle of *wu-wei*, or active not-doing (Redding, 1993, p.50) in the Chinese culture of Taoism should be applied.

Evolutionarily empowered individuals not only perceive the dynamics of change of which they are a part and are conscious of the urgency for responsible interaction with their evolving socioecological system, but manifest their perceptions and consciousness in value shifts that re-align individual cognitive maps with the new realities of the world around them. (Laszlo & Krippner, 1998, p.30). As Laszlo & Laszlo (1997) conclude,

…given that they are culture-conditioned, social systems are embedded in an even more mercurial environment than are biological systems. What the reality is that affects the existence of social institutions, political states, and economic systems depends not only on what the case is, but on what its members and its leadership perceive it to be. Since reality is not an absolute given, systems theorists should not seek to design absolute solutions to contemporary challenges; solutions should take the form of flexible surveillance systems that help decision takers select humanistic and sustainable responses to the issues they confront (p.23).

Hock (1994, p. 6) furthers that, “only a new concept of organization in which the whole does not control the parts and none of the parts control the whole, can competition and cooperation be blended, order emerge, and effective, efficient, equitable” systems of human activity evolve.
As researchers, how can we effectively make positive contribution to public policy-making, Nelson and Winter offer us the following suggestions (Nelson & Winter, 1982a):

“If our researches are to influence policy, they are most likely to do so by affecting the way in which policy contexts are interpreted…Beliefs about the nature of the problem play an important role at several stages: first, in diagnosing a situation and defining it as a particular kind of policy problem in the first place; second, in interpreting experience with a policy and establishing the context within which minor modifications of the initial program are proposed and debated; and, third, in influencing the broader evaluation of whether the program is basically on track, needs to be changed drastically, or should be killed” (p. 378).

Their suggestions have basically pointed to two important elements in policy-making: one is the nature and the context of problem; the other is mechanism of evaluation. These two points are also applied and demonstrated in my theorizing the resource-based system approach to globalization and organization. I define the nature of the problem as the resource attenuation and inequality as well as their interactions with human minds and behaviors, and suggest efficiency of a system’s organizing dynamics in terms of resource exploration, allocation, utilization, and redistribution should be the measure of value in assessing human achievement.

6.4 Limitation & Future Research

As a study based on ethnography, this research inherits all the limitations that is typical for qualitative research, especially in facing the dilemmas an ethnographer. Mathner and Doucet (1997) suggested to address them this way:

“The best we can do then is to trace and document our data analysis processes, and the choices and decisions we make, so that other researchers and interested parties can see for themselves some of what has been lost and some of what has been gained. We need to
document these reflexive processes, not just in general terms such as our class, gender and ethnic background; but in a more concrete and nitty-gritty way in terms of where, how and why particular decisions are made at particular stages” (p.138).

A potential are for future research under the resource-based systems approach is on how to operationalize the measure of efficiency. In the subjective world of human societies, the systems of which humans are the major agents and the most basic constituent units, the perception of the extent of the threat from resource attenuation discussed above or any other human affairs in general may vary from one individual to another. Differences exist in the disturbances or perturbations in individuals’ states of mind that the perceived threats might cause and that consequently stimulate actions and changes in the human activity systems. Human life experiences are shaped by many forces, each having an impact on our feelings, and perception about life is the outcome that integrates those forces (Csikszentmihályi, 1991). The perceived difference in world reality, like the temperature gradient in thermodynamics, gives the tendency of a change process in systems where human activities are involved. Therefore, it is suggested to be a measure of psychological entropy or social entropy (for collective use) of the human activity systems.

Following this, I would like to propose a practical measurement of efficiency in the systems approach to theorizing globalization for future research to assess the evolutionary capability of an entity or process, although mathematical scrutiny of an equation is currently out of my area of expertise and its quantitative testing is so far beyond the scope of the dissertation.

Efficiency (E, the amount of entropy decrease of the local system per unit of net entropy created in the global ecosystem), is seen as a function of individual human perception of wellbeing (the stability, orderliness, coherence, or simply the satisfaction in the living of life),
$P_W$. $P_W$ can be obtained as an index of questionnaire results. The questionnaire can be designed with questions that cover the above-mentioned aspects about an individual’s feeling toward one’s own life (personal life), life in a group (e.g., community life, professional life, and social life, etc.), or life of others and other systems. For a system that contains a group of individuals, $P_W$ will be the statistical average of the group’s results. For values of perception toward different systems to be comparable, they have to be from the same individual or group of individuals. Perception of disorder will be the inverse of perception of wellbeing, $P_D = 1/P_W$. For people living in a local society, if they perceive the wellbeing of living in their own society is lower than that of the society in comparison, alternatively, the perceived disorder in the local society is higher than that of the reference society, the spontaneous expectation or the tendency of the process of change will be the heat flow from the local society to the reference society.
REFERENCES


*Communication Theory*, 13, 5-38.


Donckels, R., & Lambrecht, J. (1995). *Joint ventures: No longer a mysterious world for SMEs from developed and developing countries. (Includes bibliography)*


Grant, R. M. (1996). *Toward a knowledge-based theory of the firm.* (knowledge and the firm)


http://www.imshealth.com/portal/site/imshealth/menuitem.a46c6d4df3db4b3d88f611019418c22a?vgnextoid=4b8c410b6c718210VgnVCM100000ed152ca2RCRD&vgnextchannel=41a67900b55a5110VgnVCM10000071812ca2RCRD&vgnextfmt=default


Robertson, R. (1991a). Social theory, cultural relativity and the problem of globality, in King, A (eds), ?


