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**THE WAY OF *CHŌJU*:**

**CONSUMING LONGEVITY IN A RURAL JAPANESE TOWN**

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## Abstract

This thesis reviews the literature on the anthropology and biology of aging, Japanese health cosmology, and self-medication and analyzes the findings from a study investigating the perceptions on diet, health, and longevity of rural Japanese elderly living in southwestern Japan. A biocultural theoretical perspective is used to understand the relationship between culture, identity, tradition, and longevity. To rural elderly Japanese, health is a matter of maintaining balance through diet and lifestyle, while disease is diagnosed and treated by physicians and biomedical pharmaceuticals. Traditional Japanese foods have been shown to be longevity-enhancing, although Okinawans, who have the greatest life expectancy of Japanese, do not eat a traditional Japanese diet. This disparity is reconciled by the adopted of a number of foods from Okinawa, such as *nigagori*. The bioscientific literature on some foods listed by informants as good for longevity is analyzed and linked to the literature on cultural identity and nationalism. Consuming traditional Japanese foods for longevity allows Japanese to participate in their cultural identity while at the same time, eating the biologically best foods for health and longevity.

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## Preface: Japanese Pronunciation and Spelling

The vowel sounds of Romanized Japanese are: *a* as in father, *e* as in bed, *i* like the *e* in equal, *o* as in note, and *u* like the *oo* in boot. When vowels occur next to each other, each is pronounced with no break between the sounds. A line above a vowel—*ō*, *ū*, *ā*—indicates that a basic sound is elongated. (The only exception is the town name, Tanoura, which would be spelled “Tanōra” according to these notations. The word consists of two Chinese characters: “ta” for rice paddy and “ura” for bay. The “no” in between these two words is implicit and gives the meaning “Bay of the Rice Paddies.” For this reason, I have chosen to spell the word as above.)

A consonant always marks the start of a new syllable. There is never a consonant sound at the end of a syllable, although some syllables end with a written *n*, which indicates that the preceding vowel is nasalized. Consonants are otherwise pronounced essentially the same as English. Each syllable of a word is given equal stress.<sup>1</sup>

## **Chapter 1: Introduction**

### **Aging and Longevity**

Age is an essential cultural domain of humanity because it is an “ascribed characteristic” (Fry 1980) of all people, and is incorporated, elaborated and interpreted in “webs of significance” (Geertz 1973). At the same time, aging is a biological experience that occurs in generally the same way and at the same rate across human populations. Yet, how aging is defined and understood varies by society and culture. Further, theoretical perspectives employed in research influence definitions and representations of aging. Advances in molecular, genetic, and cellular technology are leading scientists closer to their goal of understanding human biological aging, while social scientists continue to ask what aging means and how societies think about and deal with their elderly. With the proportion of older individuals increasing around the world, the social, political, and economic implications of an aging citizenry have become central concerns in many societies.

One of the central questions to emerge with this growing focus on aging and longevity is how to define these terms. Most research on aging relies on chronological, biological, or demographic measures of aging (Mullan 2000). Industrialized societies tend to measure age chronologically, although scientists argue that this measure is not an accurate reflection of biological age. In many other societies, age is not measured in years, but by culturally and socially significant transitions in life, such as menarche, marriage, and the birth of grandchildren. These life experiences may or may not correlate with Western notions of chronological, biological, and social age. For the purpose of this thesis, “aging” refers to the biological and/or social processes that indicate accumulated



chronological years or changes in social status associated with chronological age or life events, while “longevity” refers to the notion of experienced or expected lifespan for an individual as measured in chronological years.

At present, much of the world experiences massive demographic shifts in the distribution of age categories. Fertility rates are declining as people enjoy increased longevity, creating a trend toward “aging populations.” These shifts in population age demographics can occur very rapidly, such as the aged population in Japan which doubled from 7% to 14% in just 26 years, or more slowly, such as in France, where the same shift took 115 years (Miles and Brody 1994). Such demographic shifts have impacts on every aspect of social life, ranging among disease epidemiology, gender relations, family structures, social and welfare policy, and consumer markets.

Technological advances have allowed many elderly adults to enjoy longer periods of high functioning and activity, creating a realm of “healthy elders” who participate actively in society. However, increased longevity does not necessarily translate to better quality of life, and the issues of disability and infirmity in old age have become central concerns in policy, care giving, and social support.

### Japanese Longevity

The Japanese are the longest living people on earth. The average life expectancy for women is 84.93 and for men 78.07 (Japan Ministry of Health and Welfare 2001).<sup>2</sup> By 2015, 18% of the population will be over the age of 65, and Japan will have the highest proportion of elderly in the world. The life expectancy in Japan far exceeds that of the United States, which has a life expectancy of 79.7 for women and 72.8 for men, while France and Sweden fall closer behind at 82.4 and 81.4 for women and 74.5 and 75.6 for

men, respectively (Kinsella 1997). Japan attracts particular attention because it is the first non-Western society to experience a rapid demographic increase in its population of elderly. Kinoshita and Kiefer (1992) suggest that Japan's high levels of industrialization and standards of health care, as well as cultural traits that venerate the aged and emphasize a family-centered society, can offer some insight for addressing the needs of the elderly in nations soon anticipating or already dealing with increasing populations of elderly.

Despite the unprecedented challenges of dealing with a large aged population, the appeal of a long, and healthy, life has driven many research endeavors worldwide that seek to understand Japanese longevity. It is a daunting challenge. The now elderly Japanese lived through a period of massive national restructuring as the country moved from an agricultural subsistence base to industrial production. Millions of Japanese migrated from the rural countryside to urban centers, and the standard of living changed markedly since the mid-20<sup>th</sup> century. The effects of industrialization and urbanization on health usually include increases in chronic diseases and other problems attributed to these subsistence and demographic changes, but the effects of these changes on health are not observed immediately. Further, Okinawa is the prefecture with the highest rates of longevity in the country, yet is also the poorest, showing that longevity does not directly correlate with economic status. Okinawa is the prefecture most recently incorporated into the nation, and has a different history, ethnicity, and cultural base, although in many ways, Okinawa has adopted the diet, culture, and language of Japan. Thus, the achievement of longevity in Japan, as anywhere, cannot be associated with a single

factor. Its complexity spans the breadth of economics, politics, gender, religion, psychology, culture, and biology.

Much of the literature on health and aging in Japan examines Japan from a macrolevel perspective, addressing the formalized Japanese health care system, both biomedical, which forms the basis of most health care delivery in the country, and traditional (e.g., *kampō*) (Lock 1980; Lock 1987a; Kinoshita and Kiefer 1992; Lock 1993; Maeda 1993). Demographic and statistical data, widely available from frequent national surveys, are used liberally in publications about the aggregate health of Japanese. Other literature addresses the more cultural aspects of health, such as the fundamental notions of purity and impurity that structure the daily lives of Japanese, or examines the interplay of religion and healing in contemporary Japanese contexts (Ohnuki-Tierney 1984; Lock 1987b; Lock 1993). In the anthropological literature, only a handful of scholars have contributed ethnographic data to the body of knowledge on Japanese aging and health (Lock 1993; Kinoshita and Kiefer 1992; Kiefer 1990), and there is virtually nothing on the experience of rural Japanese elders.

### The Project and Its Context

Although anthropology has been criticized for its neglect of aging in the past, anthropologists are increasingly playing a vital role in the study of later life, not only because aging populations are increasing around the world, but also because of the growing public recognition of the significance of culture and cultural differences in human life (Rubinstein 1990). In particular, anthropology contributes to an understanding of the human condition by striving to produce “contextually-accurate knowledge” of ourselves, by elucidating meaning through the lens of the anthropological perspective,

and finally, by participating in social advocacy of the subjects it represents. These goals of anthropology are especially salient in an anthropology of aging, where elderly may be invisible, marginalized, or negatively stereotyped. At the least, their experience is understudied and underrepresented. Aging is a powerful site for inquiry because it is a human universal where culture and biology converge to produce experience and meaning.

To begin to understand Japanese longevity, one must examine the intersection of many factors that influence the aging process (e.g., gender, economics, culture, biology, etc.). For the purpose of this study, I am interested in the perspectives of rural Japanese on achieving and maintaining longevity through diet and lifestyle, and how these beliefs and practices interplay with the biology of longevity. Underpinning this research is the biocultural perspective, a theoretical approach that attempts to elucidate the complex interplay between biology and culture. The cultural beliefs of elderly Japanese will inform their health choices, in turn, influencing their physiological health. Observations of biological trends within a population may influence health choices a certain way, which ultimately may infuse cultural practices and ideologies. The longevity of the Japanese is an ideal site from which to examine the dialectic between culture and biology and, in particular, local understandings of diet, lifestyle, and health, and their relationship to Japanese longevity.

An understanding of local notions of biological processes and how they influence longevity are integral to apprehending behavioral choices. What rural Japanese feel are the markers or major health concerns of aging and how they perceive its processes are fundamental questions to learn what people expect as they age. This research project

looks at the way members of a rural Japanese community believe they should live as they get older in order to maintain their health or treat the perceived symptoms of aging.

This research was originally intended to gain an understanding of the aging experience of rural Japanese, and how they deal with the symptoms and signs through everyday life, such as diet, lifestyle, and attitude. As I explained my project in Japanese to the people who were assisting me in setting up contacts and a site for interviewing, my project gradually transformed in focus and theme (for the better) as my description was reinterpreted to be a study of *chōju* (longevity). The Chinese characters that represent the term *chōju* are the character for “long” or “chief” (長) and the character for “longevity” (寿). The second character also means “celebration, congratulations, or greetings” and is often used in New Year’s greetings to wish prosperity and longevity on the recipient. It is ironic that my informants emphasized longevity over aging, since it is longevity rather than aging that is becoming the new focus internationally in related areas of research. While my methodology was largely the same, the nuance of the questions and analysis is likely altered when one emphasizes longevity over aging. Further, since I was introduced to the elderly patrons of a local senior center as a graduate student from America studying *chōju*, I expect their answers to my inquiries reflect this emphasis. Thus, the original intention of my research was transformed to accommodate a local, indigenous conception of not only what I was looking for, but also *why* I was asking these questions. The Japanese sense of pride and individuality in their history and culture, recently termed “cultural nationalism” (Yoshino 1992), carries into the knowledge and pride of being the world’s longest-lived people. The act of reinterpreting my research topic to highlight

longevity, however unintentionally, may have been an instance of evoking the familiar discourse of Japanese cultural and national identity.

### Organization of the Thesis

Chapter Two explains the setting and methodology of the study that illustrates the literature review, as well as offers an overview of the theoretical perspective employed and how it can be used to understand aging and longevity. Chapter Three describes some major perspectives on aging in the biological and anthropological literature, as well as gives an overview of the history of the anthropology of aging. Chapter Four examines the literature on aging in Japan, particularly contemporary attitudes toward aging and the aged, as well as the contemporary sociopolitical environment for the aged in Japan. Chapter Five describes the limited literature on self-care, including self-care in Japan, as well as offers an overview of the general literature on food as medicine and food and identity. Chapter Six gives a background of Japanese health cosmology, the history and culture of Japanese foods, food as medicine in Japan, and food and identity in Japan. Chapter Seven presents the findings of the study. Chapter Eight analyzes the findings using the biocultural theoretical perspective and synthesizes these results with the larger literature.

## **Chapter 2: Setting and Methods**

### **The Town: Tanoura**

Tanoura is a small town that rests between the mountains and the Ariake Sea on the western side of Japan's southernmost main island, Kyushū (Appendix A) in the prefecture of Kumamoto. Tokyo is 1000 kilometers northeast of Kumamoto City on the island of Honshu, and Tanoura itself is one hour by expressway from the prefectural capital, Kumamoto City, and 45 minutes by local highway to Minamata, the site of the famous mercury pollution-induced Minamata disease. Tanoura consists of six smaller hamlets: the two larger valley communities of Tanoura and Kodanoura; two seaside communities, Uminoura and Imuta; the mountain village Yokoigi; and Hata Island.

Tanoura's population has been declining in recent years as the younger people move to larger cities to work and raise their families. In May, 2002 the population numbered 5541 (Appendix B). In the last five years, the population has declined by more than 450. A disproportionate number of Tanoura's residents are elderly. Thirty percent are over the age of 65, while only 12% are under the age of 14. The people who live in Tanoura are concerned about this trend. In the spring of 1996, one of the town's four elementary schools was closed and the 28 students in first through sixth grade sent to the larger elementary school in the main part of town. In early 2002, a special committee was convened to begin preparations for a *gappei* (union) with the next town, when Tanoura will merge with the larger municipal jurisdiction of Ashikita Town, the next town south of Tanoura on the seaside. When this occurs, Tanoura will no longer exist as a municipal entity, and will even lose its name to whatever the new town is called.

At the same time, Tanoura has been devoting many resources to enhancing

Tanoura's tourist amenities. The small peninsula that juts into the sea has been turned into a beach park with a human-made beach, cabins for rent, and a Fruit Village that features a restaurant with local specialties, local crafts for sale, and rooms for meetings and parties. Otachimisaki Beach Park also has tennis courts and 500 meter long slides that can take a visitor much more quickly to the beach than the paved pathway cut into the mountainside. There are several noodle shops and a shop that sells black sesame seed ice cream. In the spring of 1997, a ceremony opened one of the Park's biggest attractions, the salt water hot spring baths. More recently, a campground was completed. In the summers, the beach fills with tourists from around Kyushū, and Tanoura now boasts several new convenience and *o-bento* (boxed lunch) shops where visitors can buy lunch, supplies, and souvenir foods (very popular in Japan) to take home.

To accommodate this influx of tourists as Tanoura's attractions multiply, the new high-speed expressway being constructed to link Fukuoka City in the far north of Kyushū with Kagoshima, the southernmost island's southernmost city, will run through Tanoura, with an exit for tourists wishing to go to Otachimisaki Park. The huge concrete pillars that will support the highway jut from the rice paddies near the junior high school. A small local shop where many local residents bought *miso*, fruit, fish, and other everyday foods is gone; and the scene of concrete pillars looming from where the shop once stood gives the odd impression that the shop has been crushed by one marching concrete leg on its way to Kagoshima.

Tanoura's temperatures range from 37 degrees Celsius (106° F) in the summer to 0 degrees Celsius (32° F) in the winter, with averages slightly warmer than Fukuoka City's (150 kilometers to the north) average range from 27.6° C in the summer to 6.4° C



in the winter (Nempyo 2001). Summer heat is accompanied by high humidity levels and bright sunlight, which gives the rice paddies an iridescent green glow. There are palm trees and cycads in the area, as well as Japanese cypress and different varieties of deciduous and evergreen trees. While much of the more northerly areas of Japan, and higher altitude areas of Kumamoto, receive snow in the winter, Tanoura rarely does.

The entire prefecture of Kumamoto, with the exception of the capital city of Kumamoto City, is primarily *Inaka* (rural) and agricultural. Tanoura is famous for its oranges. In particular, it is known for its *Amanatsu Mikan* (Sweet Summer [Mandarin] Orange), but as this has proven difficult to produce on a large scale, many of the orange farmers in the area now grow an orange called *Decopon*, along with tangerines, kumquats, and *bompeyū* (a cantaloupe-sized citrus fruit that resembles grapefruit in appearance and taste). The oranges ripen in January and February.

Farming is the major economic base of Tanoura, although the Tokai Carbon Factory also provides jobs, and has been in Tanoura long enough for men in their fifties to have spent their careers there. People in Tanoura also fish in the Ariake Sea, particularly for the famous *tatsuo*, the long silver “swordfish,” that makes a delicious *sashimi*. Although some people make their careers as fishermen, Tanoura is not a fishing village.

The *Inaka* countryside is the site of great nostalgia for city dwellers, many of whom fled the back-breaking agricultural work of the countryside. Rural dwellers are sometimes depicted in caricatures of farmers with big grins eating huge *onigiri* (rice balls), but more often the countryside is romanticized as a place with traditional values, wholesome food, and good relationships. However, even as the idea of the traditional

countryside is meaningful for urban Japanese wishing to be reminded of what they conceive as a simpler time, in reality, much of the Japanese countryside is being left to its elderly inhabitants, many of whom still grow rice and live the rural life laced with tradition their city-dwelling compatriots imagine.

### Hachimansō Senior Center

For this study, one week of day-long participant observation and interviewing was spent at Hachimansō (*God of War Villa*) Senior Center, a facility for local healthy elders over the age of 65, which is funded by the local government and overseen by the Social Welfare Department of the Tanoura Town Hall. Hachimansō is one of three senior centers in Tanoura, including Tanourasō (*Tanoura Villa*), another recreational center for seniors, as well as the recently constructed “*Donguri Ie* (Acorn House),” which is affiliated with the local hospital and also offers physical therapy and rehabilitation services, as well as social and recreational opportunities.

Hachimansō opened its day service to elders on March 22, 1994 and has a central location just behind the City Hall’s playing field and near the newly-constructed Tanoura Nursery School. The facility consists of three sections: a great hall, with a very large *tatami* (traditional woven grass floor covering) surface, a residence area with seven private rooms, and a large room with four large, round tables, a color television, two massage beds, a heat lamp, and a raised *tatami* mat floor with another television where people lie down to rest. Most of the visitors spend the day in this room. The room is cheerfully decorated with birthday announcements and *origami* boxes, vases, and other decorations, including small cloth owls, which represent good luck, made by some of the Hachimansō visitors.

## Methods

The foundation for the study was laid from 1995 to 1997 when I spent two years living in Tanoura as a Japanese Ministry of Education Assistant English Teacher. Only two foreigners had lived in the town prior to 1995, each for one year in the two years preceding my arrival. I was the first female foreigner to reside in Tanoura, and was met with open curiosity and generosity. In the two years of residence, I gained, along with a proficiency in Japanese language, a familiarity with the Japanese culture and customs of rural Kumamoto prefecture and an interest in the food and health beliefs and practices of Japan and East Asia.

The field research for this study was conducted in July of 2002, beginning two days after the annual rainy season ended and the hottest, most humid time of the year began. The short duration of the field research is a limitation in the sense that Japanese, especially rural Japanese, tend to eat seasonally. Conducting research on diet and plants in an agrarian, traditional community in a country with four seasons encourages a methodology that spans at least one full cycle of seasons to learn the full range of dietary and health practices in the community. However, having spent two years in the same community five years before somewhat mitigates this limitation, as I had experienced two years of seasonally varying diet and lifestyle, albeit without the methodological rigor of field research. The season in which the research was conducted is mentioned because it likely led to a seasonal bias in the reports of the informants.

A total of 48 people participated in the study. Eleven participants were men. Methods used include participant observation and individual and group interviews. I spent five days at Hachimansō as a participant observer, where I conducted interviews

with six groups of six to eight individuals who were willing to participate. These interviews lasted from 30 minutes to 1 ½ hours. It was possible to visit Hachimansō and interview the patrons because the mayor of Tanoura, after receiving a letter of introduction and explanation, made the necessary arrangements with the Tanoura Town Social Welfare Department and the Hachimansō staff. For the first two interviews, a Hachimansō staff member helped to translate the participants' responses from *Tanoura-ben* (the local Tanoura dialect) into regular Japanese. I conducted interviews during the remaining three days without the aid of a translator. After interviewing, the rest of the day was spent participating in games, crafts, conversation, and lunch with Hachimansō visitors.

All of the people with whom I spoke were born in Tanoura, or moved there (usually women) when they married in their late teens. Most spent their lives working on farms, although a few had unconventional careers, such as one woman who ran a restaurant that provided food for weddings and *enkai* (formal dinner parties). Two women were unable to have children, and one had adopted two children. The oldest of the women (over age 90) said that they did not go to school beyond sixth grade.

I conducted interviews with five members of the community. One primary informant was a 71-year old retired man who used to work for the local government. His 65-year old wife was present during the interviews, but did not contribute orally to the discussion, although she did nod in acquiescence to some of her husband's comments. Further, as a traditional Japanese housewife, she is responsible not only for preparing the meals, teas, and other foods her husband described, but also for being knowledgeable about health and nutrition in order to take care of her family, a source of pride for many

Japanese women. For this reason, I consider these to be joint interviews. These interviews lasted about two hours. Since this informant knew the subject of my research before I visited him, he had prepared written responses in anticipation of my arrival. We expanded upon these responses with open-ended questions and general discussion. His wife offered me several of the foods and teas he described. These interviews were in mixed Japanese and English. (The wife does not speak English, which is another reason for her minimal participation.)

Another informant was the local doctor, who owns and operates the only hospital in Tanoura. He is 62 years old and grew up in Tanoura before establishing his practice there. I conducted an open-ended interview in Japanese for about one hour with him.

The husband and wife with whom I stayed in Tanoura in the summer of 2002 were also key informants. They are employed at the hospital as a radiologist and a nurse, respectively. As I was staying with them, interviews consisted more of sporadic conversation that arose in response to articles in the newspaper (e.g., Chinese herbal weight loss medicine deaths), health programs on television, my observations from Hachimansō, and any general questions I had about Japan and health in Japan. The husband is 55 years old, his wife is 49. Both work closely with the many elderly people, including Hachimansō patrons, who visit the hospital regularly for check-ups and routine care. Conversations with the husband were in mixed Japanese and English, and with the wife in Japanese.

A final informant was a 55-year old woman whom I interviewed briefly (15 minutes) about her attitudes regarding *kampō*. This topic is not central to this thesis, but may reveal attitudes about self-medication in general, since *kampō* medication is

available both over the counter and by prescription. This interview was conducted in English.

As stated above, one of the major methodological limitations of this study is its brevity. I spent a total of seventeen days in Tanoura from July to August 2002, which bounded the study to season (late summer) and current events (e.g., much publicity about fatalities from a Chinese herbal weight-loss product). Another limitation of the study is my language proficiency. Although I can converse fairly well with people who are sensitive to communicating with non-native Japanese speakers, I am less proficient in communicating in the local dialect (*Tanoura-ben*). Most of the elderly people in Tanoura speak only *Tanoura-ben*, although several individuals were able to modify their language to accommodate my level of proficiency. A final limitation of the study is that I did not collect voucher specimens of the plants and foods I discussed with people, which may compromise the consistency between the foods and supplements people mentioned and the taxonomic name I assigned later (Appendix C). However, I am confident that the foods are accurately labeled since I was dealing with common and familiar foods and plants where there is generally consensus between the Japanese, English, and Latin names. When unknown, I indicate as such.

### The Biocultural Perspective

The goal of the biocultural approach in anthropology is to illustrate how cultural practices influence human biology, and how these biologies, in turn, influence human culture (Goodman and Leatherman 1997). Integral to the biocultural perspective is attention to social relations, the links between global and local, history, and historical contingency. Recognizing that humans are active agents in constructing and producing

our environments and worldviews is key to understanding human action. At The biocultural dialectic recognizes that culture is shaped by biological realities as much as cultural practices influence biology. While biological epistemology is a product of the Western scientific tradition (and should be recognized as culturally constructed), it nonetheless represents a physical reality that can be systematically observed, quantified, and compared.

One challenge of the biocultural approach is achieving a familiarity and comfort with both cultural approaches to anthropology as well as with biological concepts and methodologies. In the past, biological and cultural anthropologists have diverged in their approaches and perspectives, limiting communication about the relationships between biology and culture. The conclusions of both biological and cultural anthropology weaken when the contributions to an understanding of human behavior and experience disregards the interrelationship between the culture and biology.

Anthropologists interested in human health and disease, in particular, find the biocultural perspective useful to understanding the relationship between illness and culture. Henderson (1990) argues that all of health and disease is a social science because of their inextricable relationship with culturally-based meaning and value systems. Processes that are part of the human life cycle, however it is differently understood and regarded across cultures, are ideal foci for investigation of dialectics between human biology and culture. While a biocultural perspective has been increasingly employed as an analytical tool to understand human variation in nutrition, growth, health, and disease, this approach has not been used to understand variations in experience of the human life cycle, particularly aging and the aged.

Researchers suggest that aging has been a neglected topic in anthropology in general, which will be described later in this paper, although the lack of a biocultural approach to aging in anthropology has not been addressed. Reasons may range from the relative recent emergence of the biocultural theoretical approach to entrenched “ageism,” the prejudice or discrimination against the elderly, or because of the consideration that aging is a universal, natural process that culture cannot influence, making a biocultural approach irrelevant. However, one danger of a “naturalistic” outlook on aging is that the perceived burden of the elderly on society is also considered to be “natural” (Mullan 2000), with subsequent political and social repercussions. At the same time, current discourse in the biological and popular literature applies a disease model to aging and suggests a “cure” for aging might be found in the future. The naturalistic and medicalized perceptions of aging seem to be at odds conceptually, which suggests a tension inherent in the paradigm shift from a naturalistic to a clinical orientation to the aging process. This cultural conceptual shift is a rich area for biocultural inquiry because of the biological advantages or repercussions of cultural practices that treat aging as a natural process or as a medical problem to be treated. These biological, political, and sociocultural repercussions and relationships are precisely what the biocultural approach seeks to examine, and is where a biocultural approach to aging is most illuminating. Biology and culture interact to produce an understanding and experience of aging that is unique not only to a culture but to an individual, a concept that Lock (2001) calls “local biologies.”<sup>3</sup>



### A Biocultural Approach to Aging in Anthropology

Keith (1980) is one of the early proponents of a biocultural approach to aging in anthropology, although this term is not a part of her lexicon. She emphasizes, perhaps in a reminder to researchers focusing too ardently on the biology of aging, that culture plays a powerful role in the experience of aging, although aging is also of course a biological process. Some research, while not explicitly biocultural, has looked at how elderly individuals think about aging, including physical changes (Sankar 1984; Bryant et al. 2001). While the question of biocultural dialectics is not explicitly stated in research design and analysis, scholars recognize the difficulty of discussing aging without acknowledging the interaction between biology and culture, however implicitly. By framing studies within a biocultural perspective, the questions asked and methodologies employed will yield an understanding of human aging more aligned with the holistic goals of anthropological inquiry.

Lock's (1993) analysis of aging and menopause in North America and Japan is the only ethnography of aging framed by a biocultural perspective in the literature. Her ethnography compares biological processes and variation between Japanese and North American women, as well as local perspectives on these processes. The biomedical assertion that menopause (while a biologically universal event) is a universal biological experience is not accurate. Hidden cultural assumptions about female bodies, social roles, and biology work together to produce a construction of menopause that is presumed to be universal, but is specific to American women. Japanese women rarely consider menopause as anything more than the cessation of menstruation and do not associate it with the processes of aging, unlike North American biomedicine that attributes much of

female aging to the diminished production of estrogen after menopause. Further, biomedicine constructs the biological reality of diminished estrogen production to be something anomalous and in need of intervention. Japanese women, on the other hand, traditionally anticipate aging as a time of greater household power, and like Bengali women,<sup>4</sup> mark their age in relation to changing social roles created by their children's marriage or the birth of grandchildren. Japanese women's physical experiences of aging are not identical to those of North American women nor is their biological reality morally and culturally loaded in the same way as are North American women's physical signs of aging. The relationship of politics, economics, biology, gender, and aging are contingent upon each other to produce women's experience of menopause. Using a biocultural approach to examine this subject illuminates the processes that produce both biological and social experience.

Transitions between culturally defined age categories may be viewed in the context of underlying biological changes, although culture does not merely respond to biological changes, but may influence them as well (Beall 1984). Most ethnographic analyses suggest that social roles in a given society may constrain or compensate individuals for their inevitable physical decline as they age (Keith 1980). Cultural constraints act powerfully on the experience of aging people as their social roles are redefined as lesser in value. In contrast, compensations may allow greater social freedoms from previously constrained roles, or offer new roles that are compatible with greater age. An issue that merits further exploration is how these constraints or compensations actually shape individuals' physical experience. Suggesting that it is the decline in function that leads to constraints or compensations ignores many other factors

of human social life that lead to these role changes, and in which physical decline may be more incidental than causative.

Individuals perceive the physical and mental signs of aging gradually throughout their life course, and respond to them in varying ways depending upon the individual and the stage of life. At the same time, age is often determined by social role, which changes with menarche, marriage, children's marriage, or old age ceremonies (or forced retirement), rather than by physical or mental function. Additionally, as the literature on the biology of aging shows, physical aging is a series of processes that effect decline in function. These physical changes are experienced gradually throughout the life course, rather than suddenly appearing when an individual is eligible to claim Social Security benefits or their eldest son is married. Nor are these changes necessarily ignored or irrelevant until a certain age when someone is deemed officially "old." The tension between social status as aged and the physical experience of aging is the primary focus of an approach that examines the dialectic between culture and biology.

Although a biocultural approach to aging has not yet become standard in the literature, there is hope for the future of the anthropological study of aging. Researchers for the last 20 years have reminded us that aging is biological, social, and cultural. A monograph on aging using a biocultural perspective has been published (Lock 1993). Other scholars call for more attention to the synthesis between biology and culture when examining human aging (Cattell 1996). A next step in the anthropology of aging is to elucidate the process and experience of aging by investigating how society as culture, and biology as physical experience, interact to produce a biocultural reality of aging. It is now

a matter of systematically applying a biocultural approach, both as a main theoretical thrust in studies of aging and as a theoretical supplements to other approaches to aging.

### **Chapter 3: Perspectives on Aging**

Global discourse increasingly subsumes aging under the rubric of biomedicine and conflates it with disease. Examining aging from a biocultural perspective requires looking at both the biological processes of aging and at how culturally constructed understandings of these processes are produced and reproduced. Building upon a still emerging history of the anthropology of aging, a biocultural approach will engage the dynamic, processual nature of aging by illuminating how biology and culture influence each other to produce to embodied experience. Since the biocultural approach is an attempt to synthesize the biological with the cultural to understand human experience, reviews of contemporary understandings of and inquiry into aging in both the social and biological sciences are salient.

Gerontological research in the U.S. has traditionally emphasized the social aspects of aging, while other countries concentrate on its biomedical aspects (Palmore 1993). This trend is beginning to shift as research funding and clinical practice increasingly emphasize the biomedical concerns of aging. Although anthropologists have only recently begun to develop systematic theoretical approaches to aging, other social science disciplines have formulated several key theories on aging in the U.S. Modernization theory from sociology argues that the degree of modernization is inversely correlated to the status of the elderly. Modernization often results in the marginalization of the aged as traditional values are supplanted by an emphasis on productivity and development (Featherstone and Wernick 1995; Palmore 1993; Fry 1981). Minority group theory, which questions the degree to which the elderly are integrated into society, suggests that elderly share three characteristics with other minority groups: 1) they are subject to

widespread negative stereotypes 2) they suffer from various forms of discrimination, and 3) they are a deprived group in terms of occupation, education, and social prestige (Palmore 1993). A third major theory involves a deconstruction of the once accepted “disengagement theory,” which argued that society and the elderly mutually withdraw from each other as an individual ages (Palmore 1993). The “activity theory” is more commonly accepted, and holds that most elderly actively participate in their social environments.

#### The History of the Anthropology of Aging

Prior to the 1960s, only a single monograph existed that specifically looked at aging and the aged: Simmons' (1945) *The Role of the Aged In Primitive Society*. Since then, much of the research on aging has been undertaken in response to perceived emerging social and economic problems of providing for an increasingly aged population (Clark 1973; Miles and Brody 1994). Although aging has not been a central theme in past anthropological inquiry, researchers rely on the knowledge, memories, and insights of elderly members of the communities they study (Fry; 1980; Holmes 1980; Clark 1973). The neglect of aging in anthropology is ironic for the additional reason that many anthropologists have claimed the life cycle, with its stages, roles, and rites of passage, as their special domain of expertise. There are many monographs on infancy and childhood, and fewer on the elderly, although in the last 20 years, the situation has begun to change, and a number of ethnographies on aging have emerged (e.g., Kinoshita and Kiefer 1993; Lock 1993; Lamb 2000).

Clark (1973) notes two reasons that ethnographers may not have paid significant attention to aging in the past. First, few individuals in subsistence economies, the

traditional focus of anthropological inquiry, tend to live to “old age” as it is defined in industrial society (although this does not mean there is not a conceptualization of old age in these communities, as Glascock and Feinman [1981] demonstrate). Second, those who do survive to later years often retain good mental and physical functioning, and pursue many of the same activities as they did in early adulthood. However, Featherstone and Wernick (1995) suggest that cultural and social theory has tended to ignore aging, in part, due to an aversion to considering bodily decline, old age, and death. In any case, the anthropological domain of inquiry has expanded to include industrialized societies where people do tend to live longer in good health. Further, the spread of Western biomedicine and other technologies to developing countries has simultaneously decreased infant mortality rates and provided the means for extended longevity, creating the trend of “aging” populations around the globe and even greater relevance for anthropological inquiry.

Psychology and sociology dominated the study of aging in the absence of an anthropological approach (Clark 1973). The sociological perspective examined the status and roles of the aged in the past and in contemporary Western societies, as well as other formal modes of participation in society, while psychologists tended to emphasize loss of capacity and/or loss of social involvement. When anthropologists did participate in studies on aging, their focus was along similar lines. Social anthropologists examined structural characteristics of societies while psychological anthropologists focused on the effects of culture on personality. As anthropology became increasingly engaged in aging research in the 1970s, it joined a number of other disciplines in studying aging as a developmental phenomenon.

Keith (1980) reviewed the anthropological literature on aging and old age and noted that most anthropologies of aging thus far were ethnographic in style and focus. She argues that anthropology must move to a more systematic focus by using the theoretical frameworks of general anthropology. Still, fifteen years later, Featherstone and Wernick (1995) wrote that the study of aging in all fields is “data rich and theory poor,” a situation others also note (Cohen 1994).

By the 1980s, geroanthropology was accepted as a subdiscipline in anthropology, but scholars continued to urge for expanding the anthropological perspective in geroanthropology (Cohen 1994). By the 1990s, Sokolovsky (1990) confirmed this “important new specialty” and offered other names for it: comparative sociogerontology, ethnogerontology, and the anthropology of aging. Even though the anthropology of aging became firmly entrenched as a subdiscipline, anthropologists specializing in aging were still unusually ardent that this focus must be developed further. Cohen (1994) suggested that this stridency may have been necessary as anthropology challenged its ageist assumptions, since ageism and dehumanizing assumptions about the Other still influence anthropological work.

Still, Cohen (1994) argued that while now theory underpins anthropologies of aging, *contemporary* theory is seldom engaged. Anthropology is still negotiating its approach to aging, with the study of old age as much about an “uncharted territory” as about the everyday lives of older people. However, in recent years, approaches to old age have incorporated more recent theoretical perspectives such as phenomenological and hermeneutic approaches to old age (e.g., Kaufman 1986) as well as critical approaches to



the relationship of aging with ideologies, nationalisms, modernities, and gender constructions (e.g., Lock 1993; Lamb 2000).

It is usually cultural anthropologists who review the literature on history of the anthropology of aging. The history of the *biological* anthropology of aging might be better discovered in a literature review of evolutionary biology, genetics, human ecology, and epidemiology than in cultural anthropology, further attesting to the biological and cultural schism that impedes biocultural understandings of human variation and experience.

Adulthood in the anthropological literature seems to be a monolithic experience, with little attention to how people anticipate and reflect on what is to come. Yet, how individuals anticipate the future course of their lives has implications for how they understand and experience the present. Granted, such an inquiry encompasses a broad range of human experience, yet even the experience and meanings of anticipating the transition to old age has not been addressed. Indeed, Clark (1973 p. 87) writes "...if one is to judge from typical anthropological accounts, the span of years between the achievement of adult status and funerary rites is either an ethnographic vacuum or a vast monotonous plateau of invariable behavior." An emphasis on process in the experience of aging and the relationship between biology and culture is urged for future studies in the anthropology of aging.

The following sections give an overview of cultural constructions of aging, as the traditional anthropological approach to aging, as well as current research on the biology of aging.

## Cultural Constructions of Aging

The concept of “old age” is almost universal in human societies (Sokolovsky, 1994). Glascock and Feinman (1981) found in their review of the Human Relations Area Files that there are three basic means of identifying “old:” 1) a change in social/economic role, 2) chronological age and 3) a change in physical characteristics. Of these, the change in social/economic role is the most common marker, and changes in capabilities the least common, although there is no simple association between traditional and industrialized societies and particular images of aging (Sokolovsky, 1994). While chronological age seems to be a straightforward way of determining when someone is “old,” definitions of old age using this measure are inconsistent. The term “young-old” is used in the literature to refer to the age range of sixty-five to seventy-four while “old-old” can include anyone over the age of seventy-four to those over the age of eighty-five, depending on the definitions of the researcher (Silverman 1987).<sup>5</sup> This range of categories and definitions reflects the lack of universal criteria to identify shifts in aging. Aged status is both conceptually fuzzy, and socially and politically loaded.

Biomedical technology allows for greater longevity in humans, and rapid modernization and industrialization tended to create tensions between tradition and modernity in many societies. Crews (1990, 1994) remarks that sociocultural definitions of “old age” have not kept pace with the reality of high functioning in many individuals into their sixth, seventh, and eighth decades of life. He suggests there are “lags” in sociocultural definitions of aging as technology allows for improvements in longevity and quality of life to which cultures have not yet adapted conceptual frameworks. Earlier definitions were related to prevailing patterns of declining physical and mental function,

which have largely been addressed by improved technology, but whether definitions of aging have kept up is questionable. Because social and cultural definitions of aging guide policy-making, research on aging, and clinical practice, determining how a society understands and defines aging is important to ensure that contemporary policy, research, and practice are appropriate for the aging experience of living individuals. The distinction between biological and chronological age and the new age categories of “oldest-old” or “old-old” represent some attempts to address changing patterns in aging (Crews 1994).

The implications of ageism are important in modern and modernizing societies where negative images of aging render the elderly invisible and nonparticipating, or romanticize them as representative of a bygone era, irrelevant, or “unwilling receptacles” for our nostalgia (Featherstone and Wernick 1995). The association of death with the aged makes this group seem unknown and terrifying, since in postmodern culture, death is frightening because it makes life seem meaningless. People deal with this fear of both the aging and the aged with modes of denial such as the consumption of goods that will cloak the body in images of youth. Although Featherstone and Wernick (1995) argue that there need to be more positive images of aging to counteract the negative, they also state that even positive images of aging can tend to deny the reality of death by deflecting attention from the aging experiences of older adults. A negative physical image of the old may be an important factor in understanding the construction and deconstruction of personhood in later life that contribute to the invisibility and marginalization of the elderly (Sokolovsky, 1994). Many variables factor into how the elderly are understood and portrayed, including social boundaries between generations, distribution of power

between genders over the life cycle, and use of mythology. One of the most difficult dilemmas for societies is how to manage the image of the frail, very old individual, who has the least psychological power to cope with threats to their personhood.

Clark (1973) describes six concepts of aging in North America: 1) aging as dying, 2) aging as decrement and disengagement, 3) aging as disease, 4) aging as dependency, 5) aging as minority group status, and 6) aging as development. She argues that “old age” is defined in most societies in functional terms, that is, when the individual can no longer participate in production and subsistence, an assertion that contradicts Glascock and Feinman’s (1981) previously stated conclusion that social/economic role changes determine old age.

Clark (1973) also describes five adaptive tasks necessary for an individual to adjust to aging: 1) the recognition of aging and instrumental limitations (e.g., slower reflexes); 2) redefinition of physical and social life space (e.g., smaller house); 3) finding new sources for need-satisfaction (e.g., gardening rather than race car driving); 4) reexamining criteria for evaluating oneself (e.g., based on producing excellent tomatoes rather than on winning car races); and 5) reintegration of values and life goals (e.g., accepting 1-4). What is not mentioned is the role of culture in producing the circumstances that make it necessary for an individual to engage these five adaptive tasks. Social pressures to give up race car driving and socialize with elderly gardeners, or the lack of a senior car racing club where individuals might compete against peers, may be the impetus to begin “adapting” to old age. The culture in which these adaptive tasks are necessary appears to be a monolithic, unilateral force, with aging individuals tossing

about in the current as they reach for branches that will give them some stability and orientation.

Adding a more multidimensional perspective to this analysis, Bryant et al. (2001) interviewed elderly adults about what they perceive to contribute to healthy aging. Rather than focusing only on healthy and happy elders, the researchers drew from disparate cases in order to identify factors that discriminate between more or less healthy aging. Questions targeted perceptions of health, well-being, valued abilities, activities, relationships, social support, control, sense of coherence, and personal outlook. Essentially, healthy aging means being able to “go and do something” (e.g., go and buy groceries, go and take a walk, go and visit with friends, etc.). Being able to go and do something entails four components: 1) something worthwhile to do, 2) balance between abilities and challenges, 3) appropriate external resources and, 4) personal attitude.

By framing aging in terms of what the elderly do and how they perceive what is “adaptive,” that is, leading to a “good old age,” the elderly are afforded more agency in their own aging process, rather than being the passive recipients of senescence with which they must cope lest they be swept away in an unconcerned tide of culture. On the other hand, culture also teaches an individual what it means to be a person in that society. If an individual learns from culture that being old means being dependent, ill, or irrelevant, the individual may learn to be what he or she is perceived to be. Societal notions of what defines an aged person become embodied in the individual, and the tension between agency and acceptance of cultural constructions is also an important site for biocultural inquiry into aging.

Studies that examined cultural constructions of aging in nonwestern societies have shown that aging is perceived differently in different contexts. In China, the notion of transforming “hot-cold” relationships in the body explains aging and health (Sankar 1984),<sup>6</sup> while in Samoa, modernization has contributed to a decline in elderly social status and the perception that old age is the best time in life (Holmes and Holmes 1995).<sup>7</sup> In a community in West Bengal, India, shifts in the “open” and “hot” nature of a woman’s body to become more like a man as she ages gives her greater freedom and social power (Lamb 2000).<sup>8</sup> Project Age is an ethnographic undertaking that compares constructions of aging in seven communities on four continents, finding cross-cultural universals that vary in emphasis and importance between communities (Fry, Dickerson-Putnam, Draper et al. 1997).<sup>9</sup> Most, if not all, of these cultural constructions of aging involve cultural constructions of the body and gender. Considering these perceptions is integral to inquiry into local understandings of aging.

### *The Body*

Featherstone and Wernick (1995) argue that in studying aging it is important to remember the body, but not to emphasize biology. At the same time, the body should not be considered a blank slate, but embodied and inscribed with cultural meaning. However, there are also problems with the relationship between culture and the body, particularly in societies such as the U.S. that understand the biology of the body as “natural” and “outside culture.” The material presence of the body suggests that we know what we see, even though interpretations of the body are culturally and contextually driven. Because aging is a biological, physical experience, the observation

of the aging process in our own and others' bodies serves to reinforce the culturally constructed perceptions and implications of aging as an immutable reality.

In discussing gender, Nicholson (1994 in Lamb [2000]) suggests that biology and the body are accepted as a basis on which cultural meanings are constructed. In a similar vein, the body in the anthropology of aging may also appear to be a universal "coat rack" upon which different cultural artifacts of aging are hung. While the body is a corporeal reality that may be measured and quantified in biological terms, it is also a symbolic construct. Attention to the body in an anthropology of aging can be innovative, yielding new understandings of the experience of growing old as it manifests in different ways in different bodies in different cultures.

The process of aging can also be understood in terms of the three bodies: the individual body, the social body, and the body politic (Scheper-Hughes and Lock 1986). An individual body ages, but the meanings of this process are socially constructed. These social constructions influence the body politic, where perceptions of not only the aging process, but also those who constitute the aged in a population, are politically and socially loaded. In periods of national economic crisis, the elderly are often blamed for problems that have non-demographic causes (Mullan 2000). For example, concern is often expressed about the disproportionate consumption of health care resources by the elderly, although attitudes can be as vague as broadly attributing any social and economic problem to the perception that the elderly are non-productive, but consuming, members of society.

Lock (1993) addresses how disguising aging women's bodies as younger is not about looking younger, but being younger. Hormone replacement therapy (HRT) is

biomedicine's preferred means of conferring biologically "younger" bodies to aging North American women. The implication is that the processes an aging woman experiences are not natural (even though aging might still be considered a natural process) or desirable, and that there must be biomedical or other interventions to control the dysfunction and decay of her body. These body politics of aging tie into gender issues (such as the conceptualization that "normal" female biology centers on reproductivity, motherhood, and sexuality), and highlight the interrelationship between biology and culture.

### *Gender*

Gender is an important consideration in an anthropology of aging for several reasons. First, in almost all societies, women's life expectancy is significantly longer than men's. This has implications for health care, social and gender roles, and health and social policy. Second, a biocultural approach to aging requires an examination of the physical and biological as culturally constructed realities. Values that center on the constructions of women's bodies are particularly germane to aging, as aging women, at least in the West, are traditionally marginalized on two counts: age and gender.

Although aging women may not be marginalized in other societies, those who study these societies may interpret their observations through the lens of their own, typically Western, cultures. Barbara McDonald (1985, cited in Lamb [2000]) argues that even feminist discourse has neglected aging women, focusing instead on the aspects of women that ostensibly set them apart universally: sexuality, reproductivity, and motherhood, the very values around which Western constructions of femininity center. Finally, it must be noted that although gender has become code for "female," maleness is



also a gender construction. Maleness and femaleness cannot be studied independently of each other, and the experiences of aging men deserve as much attention as that of aging women. Because of the inherent relations between gender constructions and the biologies of aging, gender issues are salient to a biocultural anthropology of aging.

### *The Biomedicalization of Aging*

Much of the epidemiological literature on aging describes the increasing numbers of elderly people in world populations and suggests that these numbers are a concern because of the higher rates of morbidity and drains on social resources that aging populations represent (Miles and Brody 1994; Davies 1988; Mullan 2000). Emphasis on the medically compromised status of the elderly and equating aging with increased disease reflects a current trend in the U.S. toward the “biomedicalization” of aging. Biomedicalization constructs aging as a medical problem, influencing research on aging, professional or clinical practice, and policy development (Estes and Binney 1989; Arluke and Peterson 1981). The “moral economies” of scientific knowledge produce and shape the pursuit of this knowledge (Lock 2001). The biomedicalization of aging in research and practice is premised on a moral economy that is grounded in a perspective that views the process of aging as one of decline and malfunction, and aged as irrelevant, diseased, and/or a poor investment for medical resources and expertise. The clinical and research practice emerging from negative conceptions of aging in turn shapes public discourse about aging and has ramifications for the experience of elderly individuals in society. Scientific, professional, policy, and lay perceptions are all at risk of becoming subsumed into biomedical hegemony, which has a problem-based rather than a basic knowledge orientation.

In a problem-based, clinical orientation toward aging, the elderly are perceived as sick and diseased. Policy is developed to address these perceived concerns, and funding is directed toward research that will solve these clinical problems. When the problem-based orientation of biomedicine is applied to aging, the process of aging is then essentially reduced to aging-associated diseases and disorders. If one adheres to the definition of disease as a deviation from normal biological functioning (Mishler, 1981), then to equate aging with disease is to implicitly regard aging anomalous. Disease is a deviation from normal biological functioning that must be corrected, and aging as disease also becomes a problem to be treated, rather than a normal process. However, the doctrine of specific etiology (Dubos 1961 in Mishler [1981]) began the trend toward looking for specific causes of disorders, deflecting the tendency of broad diagnoses of “aging” as “disease.” Still, the doctrine of specific etiology has not lessened the *association* of aging with disease; rather, now it is merely possible to identify which diseases and disorders the elderly suffer. “Age-related” diseases and conditions are familiar concepts (e.g., Alzheimer’s, Parkinson’s, osteoporosis, etc.), and the emphasis on treating these diseases has further spurred the perception that aging is rife with associated diseases, thus encouraging research funding and clinical practice that has further entrenched medicalized conceptions of aging.

There are two main characteristics of biomedical knowledge and training that shape its approach toward aging: individualism and reductionism (Estes and Binney 1989). Individualism, while effective on a patient-doctor basis, limits the consideration of larger social and environmental factors because illness is conceived as an individual problem with individual causes and solutions. The individual (and his or her biology) is

perceived as apart from society and culture, a dualism that has exacerbated the biocultural schism. Reductionism, like individualism, also attempts to explain phenomena by isolating the smallest unit of analysis. While these approaches have advantages in clinical research and practice, they also prevent awareness of social processes, statuses, and interactions. The result is an anti-holism that equates an individual with his or her disease category. American society does not focus on aging as a research and clinical concern, as is evident by the few numbers of research dollars devoted to the processes of aging (although emphasis on aging is increasing). Where aging research and policy is supported, there is an inclination to medicalize the status of the aged, as many of these research dollars are devoted to biomedical and clinical research.

Even though definitions of aging are no longer as strongly synonymous with disease, medicalization of aging processes is increasing. Professional training in medical education and research focuses on aging in terms of disease, disability, and physiological/psychological decline (Estes and Binney 1987). Policy also assumes the characteristics of the biomedical model, such as Medicare, which is an acute-care program and covers less than 45% of the needs of its beneficiaries. The 1988 Medicare Catastrophic Coverage Act enabled physicians to be the sole authorities to certify the need for respite care for chronically dependent individuals, reflecting medicine's monopoly in the control and management of the aging. Aging research and funding also reflect biomedicine's hegemonic power, as advisory councils, study sections, and review committees are predominately composed of biomedical scientists and practitioners. The National Institutes on Aging has devoted a majority of its funding resources to research devoted to aging-associated diseases, such as Alzheimer's, while contributing

significantly fewer dollars to basic social, behavioral, or even biological processes. Further, funding for social and behavioral research on aging has declined in the last 20 years, even as biomedical research funding has increased, again reflecting the biomedical emphasis in aging research. The emphasis on medical concerns in aging influences public opinion, which is that it is appropriate that medicine should be primary in the “management” of the problem of aging.

However, the biomedical model is inadequate to address macrosocial problems that are implicated in the etiology and epidemiology of ill health. Because of its tendency toward reductionism and individualism, medicalization detracts from the political and social forces that act to create conditions in which people find themselves ill (Lock 2001). Further, biomedicine emphasizes extending life at all costs, which may compromise efforts to promote healthy or happy longevity. As the population of aged in the U.S. increases, and diversifies, these issues will become more relevant. The medicalization of aging is particularly problematic in multiethnic places where the elderly encounter different concepts of aging in different contexts (e.g., biomedical setting, local community, home). They must shift to accommodate these different concepts of aging or else, “lag” behind changing biological realities due to technological and medical opportunities that might not be incorporated into a traditional or non-Western worldview which developed where these resources were not available (Crews, 1994). Although the elderly may need to negotiate different concepts of aging, a problem with general social perceptions of the aged is that these perceptions will lag behind current biological realities of aging, affecting policy, research, and practice.

Separating disease from old age has left researchers without a clear definition of old age. When medical interventions fail to resolve health problems, physicians may resort to the diagnosis of “old age,” which is akin to attributing the problem to “nature” and outside of the jurisdiction of medicine. However, the diagnosis “old age” reveals ageism on the part of the physician, a problem in a society that constructs aging as a period of decline, decay, and decrepitude. The elderly patient may be considered a poor investment for expertise and resources, which should go to more “needing” individuals (Sankar, 1984). Although society at large may attribute all dysfunction in older adults to “old age,” elderly individuals often distinguish between the slow, gradual signs of decline that represent old age, and acute problems that require intervention and can be treated. Even if aging is no longer technically considered to be synonymous with disease, lay perceptions and media representations suggest that aging is still associated with disease, decline, and dysfunction, with all the social and political repercussions that come from any broad negative stereotype of a population.

Yet, despite widespread medicalization of aging, many of the elderly resist the reduction of aging to illness (Williams and Calnan 1996). Elderly individuals have more agency in their self-perceptions and lifestyles than assumed (Bryant et al. 2001). The interactions of individual agendas with biomedical practices are not always unidirectional. That is, biomedicine is conceived as a hegemonic power that subsumes helpless individuals who do not try to resist anyway. In reality, while biomedical epistemology may frame understandings of the body and health, individuals use the institution of biomedicine to their own advantage. The literature on resistance, noncompliance, and ethnomedical beliefs and practices are also beyond the scope of this

paper, but is relevant to a contemporary discussion of the medicalization of life, especially in regard to aging and the elderly. Recently scholars are beginning to examine how these individual agendas reconstitute biomedical ideas and practices to conform to personal beliefs.

### The Biology of Aging

Crews (1993) notes there is a lack of consistent definition of aging among scholars. Some scholars suggest that aging defies definition in “biological terms” (Hayflick 1994), but suggest that it represents all changes, maturational or senescent, that occur after sexual maturity. Any animal, including human, that reaches a fixed size after sexual maturity physiologically ages, although most animals in the wild die of predation and disease before age takes its toll. Even prehistoric humans did not age to the extent that modern humans do; only one of the three hundred Neanderthals found to date may have been a postmenopausal woman (Hayflick 1994). Other animals, such as lobsters, continue to grow without measurable decline in physical function after sexual maturity.

Current research directions in the biology of aging focus on life extension, sex differences in aging, genes, risk factors, disease, and biomarkers. Epidemiology, nutrition, homeostasis, and molecular biology are emerging issues in the field. There is now a more precise understanding of cellular and molecular mechanisms of aging, in part because of their relevance to cancer, one disease that strikes a significant proportion of older adults (Ershler and Longo 1997). Researchers who study aging between populations, including biological anthropologists, are interested in changes in fat distribution, skeletal mass and content, muscle mass, blood components, and changes in immunity that accompany aging. Although biological anthropology emphasizes a more

epidemiological approach to human variation than other subdisciplines of anthropology that examine human health and disease, its recognition of human factors such as diet and behavior hints at a broader biocultural perspective, rather than premising its research on an assumption of an immutable universal human biology. At the same time, researchers who compare populations suggest some processes are human universals, such as bone loss, increased blood glucose levels, and redistribution of fat to the middle and upper body (Crews 1990; Albert and Cattell 1994).

Hayflick (1994) divides theories of aging into two groups: those that assume a preexisting master plan, such as a biological clock, and those based on random events, such as accumulations of mutations in important molecules like DNA. Although the notion of programmed aging correlates well with the idea of programmed cell death, a phenomenon recognized universally by biologists, genetic programming hypotheses are not as well substantiated as hypotheses that posit that aging is based on random genetic and molecular events. The following sections describe these hypotheses.

### *Evolutionary Hypotheses*

Some researchers argue that aging is not genetically programmed, but that humans age because there is no mechanism for maintenance and survival once this maintenance effort reduces reproductive potential (Crews 1993; Holliday 1998). Aging is a by-product of evolutionary forces acting to maximize reproductive success. That is, selection of mechanisms that maintain the body are subordinate to those that facilitate maximum reproductive effort. Changes in gene effects are posited to contribute to late-life decline. For example, genes that had beneficial effects that enhanced survival through

reproduction later become deleterious to survival since there were no selective pressures to eliminate these genes in early human evolution.

### *Biomarkers of AgIng*

The goal of biomarkers of aging research is to identify early in life different rates of aging between individuals. A biomarker of aging is a validated cellular or molecular indicator shared across populations that can be linked to rates of senescence. However, some argue that such a goal is impractical, since each individual develops his or her own phenotype in old age as a result of uncoordinated consequences of aging. Although other researchers are more optimistic, there still remain significant confounding factors that complicate attempts to measure “natural” biological aging. Validating biomarkers of aging will facilitate understanding the possible range of normal and abnormal variation in the process, until which it is impossible to develop theories of human growth, development, adaptability, and evolution of the life span that will explain the many manifestations of normal biological aging (Beall 1984; Crews 1990).

### *Caloric Restriction*

Caloric restriction (CR) was one of the first attempts to discern biological aging processes in mammals (Miller 1997). Over 60 years ago, researchers learned that rodents fed a diet with 40% fewer calories than they would consume if given free access to food lived up to 50% longer than control rodents. Some hypotheses suggest that CR restriction merely restores animals to a dietary lifestyle they would maintain in the wild, but this is unlikely, as CR rats are largely infertile. Although CR has been demonstrated to extend lifespan, less is known about its mechanisms of efficacy. Research suggests that extended lifespan from CR may be attributable to diminished blood glucose and



insulin levels, lower body temperatures, cholesterol, triglycerides, blood pressure, and arterial stiffness, elevated HDL, and slower decline of DHEA (Roth et al. 2001).

Additional research suggesting mechanisms of CR action describes increases in free glucocorticoid levels, altered expression of heat shock genes and changes in resistance to free radical-mediated damage (Miller 1997).

The beneficial effects of antioxidants in mitigating free-radical damage and associated aging-related physiological stress and age-associated diseases have been achieved with caloric restriction (Wickens 2001). Oxygen-derived free radicals create oxidative stress that causes damage to cells and tissues of the body as a result of aerobic metabolism. Reduced caloric intake leads to a decline in the production of these reactive oxygen species and a subsequent increase in lifespan. While the administration of so-called antioxidant chemicals over the last several decades has been shown to be ineffective in prolonging the life spans of animals, the same theory of age-associated diseases has been increasingly supported over the last 20 years (Kitani et al. 2001). Vitamins and antioxidant enzymes from both food and nutritional supplementation have a fundamental role in defending an organism from the oxidative stress that lead to the physiological decline associated with aging (Meccoci et al. 2000).

The most promising as primary mechanisms of the efficacy of caloric restriction are lower plasma insulin levels and reduced body temperature (Roth et al. 2001). However, CR efficacy in primates has not been conclusively demonstrated (in part because of the long lifespan of primates slows results), although there are studies with encouraging results. An approach based on biomarkers would facilitate research since investigators would not have to wait until an animal dies before determining the efficacy

of an experiment. Validating biomarkers of aging in primates is proving successful, although researchers must still beware of making assumptions that altered biomarkers indicate related changes in the aging process.

Since humans are not likely to reduce their caloric intake by 30-40%, researchers are investigating CR mimetics, such as 2-deoxyglucose (2DG) that reduces glucose/energy flux without decreasing food intake. Ingestion of 2DG reduces plasma levels and body temperature to CR levels. Other research has shown that similar mimetics occur with traditional food/medicines, such as *Gymnema sylvestre* Retz., a plant used in Ayurvedic medicine as a “sugar destroyer” and *Garcinia cambogia* Desr., also Ayurvedic, which influences fat metabolism. These plants are marketed in the West for conditions that biomedicine commonly associates with aging, such as diabetes and high cholesterol. A number of other plants are marketed to treat these conditions, possibly by mimicking CR effects, although a discussion of these plants and their effects on the aging process is beyond the scope of this paper. Investigation of nonwestern ethnomedical use of these plants for aging, as well as their modern uses, presents an ideal opportunity to examine biocultural factors in aging.

### *Cellular Senescence*

Another agenda in the biology of aging research is cellular senescence which is predicated on the fact that normal cells cannot continue to divide forever (Miller 1997). One obstacle in cellular senescence research has been replicating in vitro results in in vivo studies. Another has been the lack of unambiguous single-cell assays that distinguish newly divided cells from their progenitors. This is necessary in order to identify older cells that can be used for microbiological and molecular research on aging,

such as whether senescent cells contribute to disease pathogenesis and organ dysfunction. The length of telomeres (the terminal segments of chromosomes) may provide a way of counting the number of cell divisions since more newly divided cells (and some cell types of aging people) demonstrate shorter telomeres. Although cellular senescence has not been proven to explain human aging, the fact that cells have a finite number of divisions may have implications for overall rates of senescence.

### *Genetic Mutations*

The discovery of single gene mutations that lead to dramatic increases in longevity, as have been found in invertebrates, has challenged the perspective that aging is a collection of independent processes that happen to occur at about the same time in a single species (Miller 1997). Other evidence of single gene effects that influence lifespan in mammals may also be related to the factors that control size, as demonstrated by negative correlations between body size and longevity in dogs. Research in invertebrate genetics, while not yet applied to mammalian aging, has yielded evidence of a normally silent genetic pathway in adult nematode worms that when activated, extends lifespan by threefold or more. Further, the activation of this lifespan-extending pathway by mutations in several different genes seems to increase resistance to different stresses, such as oxidation, UV damage, and thermal stress, supporting evidence for the relationship between aging and these stresses.

Mutations that lead to shortened lifespan are known to exist in humans, usually through life-shortening diseases, although less clear are whether there are human loci that extend lifespan by affecting the aging process (Miller 1997). Research on vertebrate genetics that yielded genetic markers that discriminate among various mouse strains has

also facilitated an approach termed quantitative trait locus (QTL) mapping that may provide data on the location of mouse genes that influence longevity. Genetic markers found by QTL mapping that also influence rate of decline of immune function, muscle strength, and wound healing would support the “single process” models of aging. Rationale for identifying and cloning effective genes is provided if one or more markers are found to link to loci that influence a wide range of age-dependent changes. However, applying the QTL approach to human aging may fail for one of two reasons: there may be too many loci at which variations contribute to individual differences in aging rate; there may exist a peculiarity of the world pool of laboratory mice, which have limited genetic variation, especially at loci that might influence aging. This particularly has implications for application to humans because of the limited genetic diversity in mice compared to humans. Further, translating conclusions from animal models to humans might be problematic.

#### *Biological and Chronological Age*

One significant problem researchers have encountered in investigating human aging is the great variation in rates of aging between individuals. Biological variation when measured according to chronological age is greater between older adults than younger individuals in same-age cohorts (Beall 1984). Defining aging then encounters a wall as the scientific tenets of repeatability and standardization become relatively meaningless in the face of the biological diversity of aging adults.

In order to address this problem, distinctions are made between “biological” and “chronological” aging, where biological aging is one’s physiological age as measured against standard criteria and chronological aging is one’s age in years. This distinction

has allowed scientists to tease apart preconceptions of correlations between chronological and biological age and has turned their attention to the factors that induce biological aging independent of chronological age. Still, both Western scientific and popular literature often reports changes or differences in morphology and function associated with chronological age as a universal reflection of biological age, although these conclusions only represent modern industrialized nations (Beall 1984) and do not give an accurate representation of whether certain phenomena related to chronological age are universal or normal.

Bulpitt (1995) lists several problems with the biological and chronological age distinction. One is that different organs age at different rates, and this aging process is influenced by lifestyle factors. Determining biological age will depend upon the parameters studied, some of which may be attributable to the environment and not reflect “natural” processes of aging. Furthermore, the measurement of biological age must be validated in order to be a reliable way to measure variation between individuals, and to avoid misrepresenting older adults as having younger biological ages and vice versa due to statistical errors such as regressing to the mean. An additional consideration is that individuals, as well as organs, age at different rates, so analyses that encompass whole age cohorts, or whole bodies, are likely to be inaccurate.

Another question, particularly relevant to anthropology, is whether biological age should be based on cross-sectional or longitudinal data, since longitudinal data will reflect stressors over time, rather than capture a synchronous sample without consideration of social and historical influences. Leidy (1994) argues that examining human variation requires understanding biology at more than one level of organization.

A lifespan approach is one methodology that can be used to link events early in life to later effects in order to apprehend how sociocultural and biological components interact to create patterns of change in individuals or age cohorts that may not be evident in cross-sectional measures.

Bulpitt suggests that problems with biological age categories are owed more to simplifying and overselling the concept of biological age rather than it being a useless instrument with which to understand aging processes. Chronological age as a category should be replaced by a composite of variables that share in their age-relatedness. Crews (1990) agrees that aging and senescence are poorly represented by chronological age, and argues that in order to understand the process of human aging, precise redefinitions are necessary. In anthropological inquiry particularly, chronological age may be irrelevant in societies where age is not measured in years, nor is a conception of chronological age meaningful.

#### *Challenges In Biological AgIng Research*

There is little conclusive evidence that definitively links aging to a specific cause. One conceptual error may be to perceive aging as a monolithic or universal experience that can be linked to one biological or physiological cause. While comparative and evolutionary biology, biomarkers research, caloric restriction, mutations, cellular senescence, and genetics have presented clues to understanding the process of biological aging, none is the answer. Rather, aging is likely a series of processes that occur at approximately the same time in a human life cycle (although not always). The challenge is to “discover the basis for intraspecies synchrony (and interspecies homology) among the many diseases and lesions, and the subclinical declines and predictable changes in

tissue architecture that accumulate in old age” (Miller, 1997 p. 1258). Further complicating basic investigations into the “natural” course of aging are the cultural and social factors of aging. Biological researchers tend to maintain their emphasis on the human biology of aging, leaving examinations of the social forces that act upon biology to inquiries from the social sciences and humanities.

The greatest challenge for researchers studying the biology of aging is formulating a theory that explains the parallel loss of adaptive function in different cell and tissue types and variation in this process between individuals. Miller (1997) suggests that finding a “cure for aging” might take some time. Meanwhile, experimental pathologists might devote their attention to the related problem of discovering the mechanisms that link specific diseases to the aging process to learn why these are postponed in humans, bats, and some birds, but accelerated in mice, opossums, and other short-lived mammals. However, in the contemporary trend in public interest and funding for aging research, inquiry into the relationship of aging and disease will be supported only if it proposes to find the causes of specific diseases and solve these problems of aging.

## Chapter 4: Aging in Japan

### Cultural Values and Attitudes

Old age traditionally has been accorded great respect in Japan. By the early 1960s, some scholars had even gone so far as to deem Japan a “gerontocratic society” (Kieffer 1990). Lock (1993) notes that while aging Caucasian women in the United States tend to feel invisible, and to be regarded as somewhat socially redundant (now that their childbearing role has concluded), Japanese women do not have a similar experience because their social role as caretakers of grandchildren is still essential to the functioning of the traditional family unit, to enable the mother’s work in the fields or, more recently, to hold a job outside the home.

Japanese traditionally defined old age as age 60 (Maeda 1993). The first year after the 60<sup>th</sup> birthday was called *kanreki*, and symbolized the end of one life cycle and the beginning of second childhood. This forms the basis for a number of socially sanctioned role and behavior changes in both men and women. Namely, both are expected to become more dependent upon their children, particularly sons, and to have similar behavioral freedoms as children. Women are no longer constrained to rigid feminine speech patterns, and are allowed to be louder and more vocally opinionated while men may become quieter or more playful. However, in recent years, the definitions of aging have been changing. People over the age of 65 are now legally considered to be old, and in 1975, 40% of Japanese believed that old people were those over the age of 70.

The cultural concept of *amae* has been invoked to explain current attitudes and corresponding social policy regarding aging (Kiefer 1987). *Amae* is a notion of passive dependence that, contrary to Western sensibilities, is considered a virtue in Japanese



society. The elderly, in a state of second childhood, are expected to depend upon their families, communities, and society for their care. Families, particularly daughters-in-law, are still the preferred caretakers of the elderly, although this situation is changing as younger generations of women resist this prescribed role, creating a new demand for alternative ways of caring for the aged. Even if these families were willing to care for aged relatives, the increasing urbanization and industrialization of Japan will diminish this possibility in the future.

Kieffer (1990) offers an appropriately complex historical and cultural context of Japanese attitudes toward aging. First, the complexity of cultural systems and the plasticity of meanings within a culture means that examining isolated age-related behaviors in Japan may be inadequate to understanding the underlying meaning. Because of Japan's unique 260 year isolation from the rest of the world from 1603 to 1868, the nation developed a remarkably uniform set of customs, language, and worldview. Therefore, Japanese behaviors are more often based on perceptions of uniform unstated social expectations than is the case with most Western cultures.

A second factor influencing attitudes toward the aged is the Confucian ethical code that was borrowed from China in the 5<sup>th</sup> century (Kieffer 1990). As a result, Japan maintained age-grades that ascribed certain roles and duties to elders, and that dictated that the most important relationship is that of parent and child, and demanded respect, obedience, support and kindness toward parents. However, Wada (1995) argues that few Japanese are familiar with Confucianism, and that its legacy is not as influential on attitudes toward the aged as some scholars suggest. Rather there is a legacy of

paternalism from Confucianism that may have softened the utilitarian values that accompany modernization.

Wada (1995) attributes part of the institutionalized reverence and respect for the aged not so much to a long legacy of Confucianism, although it certainly has its roots in the Confucian moral code, but instead to a concerted effort of Imperialist Japan after the institution of the Meiji Constitution in 1889 and the institutionalization of a system of moral training to offset the constant threat of social disorganization in the process of modernization. The fundamental underpinning of this moral ideology was the traditional *ie* (home/family) system of the patriarchal samurai household. In this system, the elderly were not only respected or revered according to the moral codes, but also were assigned important social roles as mentors in family, organization (e.g., business and social), and community. In the traditional apprenticeship system, it was the elderly who were the mentors, and this traditional ideology was perpetuated through institutionalization in social and public life.

Although Japanese society may seem at first glance to be a gerontocratic society, the image of aged in Japan as revered and respected is an over-simplification of the more complex realities of the experiences of the elderly (Wada 1995). Plath (1972) describes *pokkuri jInja*, the temple where elderly go to pray for a speedy death. Dorson (1975 in Wada [1995]) notes 40 variations on the *obaasute-yama* (Granny-flinging Mountain) story, which some have interpreted to demonstrate the *lack* of respect accorded the elderly, at least elderly women. On the other hand, Yanagita (1970 in Wada [1995]) suggests that these are stories that may reinforce the importance of the wisdom of the aged. The multiple interpretations presented for Japanese feelings about aging suggest

both Japanese society's ambivalence toward aging, as well as the difficulty of discerning the Japanese meanings with the biased lens of non-Japanese values.

Japanese social attitudes and behaviors toward the aged are in a state of transition. In their Modernization Theory, Cowgill and Holmes (1972) argued that industrialization undercuts the status of the aged by nuclearizing the family, prolonging life, and placing a premium on social and technological innovation, productivity, and wealth. Plath (1972) supports this theory in reference to Japan, showing through an exhaustive review of folklore, newspapers, magazines, film, and fiction that the attitudes toward the aging were highly ambivalent. However, this view was challenged by Palmore (1975) from the vantage of ethnography and vital statistics.

Kiefer (1990) used the framework of Modernization Theory to examine the status of the elderly in Japan from the perspective of security, integration, power, and prestige. Other researchers have examined economic status as an indication of well-being in Japan, but these numbers are misleading, since 61.8% of elderly live with a child, who is the primary income earner. Japanese pensions are much lower than U.S. counterparts, and many elderly work, although often out of a sense of duty or obligation rather than economic need. Because of these circumstances, it is difficult to give a clear picture of the economic situation of Japanese elderly, since they form a single unit in terms of earning and consumption with the children they live with. Although many contribute to the income of the family, their income is officially regarded as null. Further, it is difficult to measure the family earning power made possible by grandparents who take care of grandchildren so that both parents can work.

Some researchers observe that although Japanese elderly seem to be well integrated into their families and workplaces, others note the loss of status, income, and social interaction that accompanies the policy of forced retirement. Despite the existence of numerous old people's clubs in Japan, U.S. elderly are six times more likely to participate in social activities outside the home. Six out of ten elderly Japanese live with their children (Maeda 1993), although often the co-residence is out of medical necessity rather than mutual preference. The ideal arrangement, according to surveys (Imamura 1987 in Kiefer [1990]), is to live "close but separate".

Several derogatory epithets offer evidence that there is not unanimous admiration for the aged--for example, *umeboshi-baba* (dried, pickled plum crone), *ojIn* (old codger) and *yakamashii basan* (noisy old woman). A Facts on Aging quiz given to comparable groups of U.S. and Japanese people found that the Japanese are less knowledgeable about the aged, and have more negative stereotypes about them. One explanation for this finding is the growing conflict between generations as a result of modernization. However, Kiefer (1990) suggests that this is more likely because of the lack of developed sensitivity to strangers in Japanese culture, rather than a universal disdain for the elderly. It might be argued that Japanese elderly are more visible in society, creating more opportunity for interaction, compared to the U.S. where the elderly are more invisible and thus, less of a concern either positive or negative. Japanese elderly are still more respected than their U.S. counterparts in terms of legal rights and the control they exert within the family.

Still, the social structures that gave elderly Japanese a sense of meaningful participation in society have been declining due to urbanization, preferences for nuclear

family, and younger women who want careers (rather than taking care of elderly in-laws). In the cities, the last generation of “selfless” women who devoted their lives to their families, including in-laws, are themselves reaching old age, without a younger generation of women prepared or willing to devote their lives to caring for them in their old age (Lock 1993). This current situation in Japan has raised concern, and preparations for alternative plans have begun to deal with the unprecedented large number of aged Japanese projected for the near future. Kiefer (1987) suggests that the basic conditions of industrial civilization have added permanently to the human life-cycle a prolonged period of decline. This decline is deemed “ugly” because too much emphasis has been devoted to postponing death rather than improving quality of life. Kiefer (1987) argues that Japan is no exception.

#### The Sociopolitical Environment of Elderly Japanese

The current population of Japan is 127 million (Ministry of Public Management, Home Affairs, Post and Telecommunications 2000). The number of people aged 65 and over is 14.8 million, or 11.9% of the total population. This figure is the highest in countries in Asia, but lower than most industrialized countries in Europe and North America. However, because of a sharp decline in birthrate beginning in 1950, the proportion of elderly in the population has been gradually increasing. In the first part of the 21<sup>st</sup> century, Japan will have one of the highest proportions of aged in the world (Maeda 1993). Further, the number of individuals over the age of 100 has markedly increased in the last 40 years. In 1963, when the Japanese government first began to keep records of centenarians, there were 153 people over the age of 100 in Japan. In 1981, this

increased to 1,000, and in 2001, there were more than 15,000 individuals over the age of 100 (Asahi Shimbun, 2002).

In 1899, the civil code was revised to require families to care for their aged members, granting parents of household heads legal priority over wives and children, and parents-in-law over brothers and sisters (Kinoshita 1984). Although Japanese today retain few of these legal rights, these policies have the lingering effect of a sense of jural entitlement to the already respected position of the aged.

The rapid urbanization and industrialization of Japan since 1955 drastically altered the social life of Japanese, both rural and urban. The Japanese elderly of today have lived under two different sets of national goals and ideologies (Maeda 1993), and they have experienced rapid changes in standards of living as the nation shifted from an agricultural subsistence base to industrialization. Elderly Japanese have experienced the rapid transition from a poor, agrarian country to a major world superpower. While urban Japanese may have to deal with rapid shifts in social roles and expectations, these transitions affect rural elderly Japanese differently. Rather than a loss of purpose associated with urban life in elderly Japanese, rural Japanese are able to maintain their lifestyles, but lose a sense of family continuity as their children move to cities to raise their families. Instead of helping to raise grandchildren and enjoying life as the family matriarch, rural elderly women now often live alone or with their husbands. Because of the industrialization and urbanization of Japan since mid-century, the proportion of aged in rural areas of Japan is much higher than in urban areas. In some areas, the proportion of aged exceeds 15%. This number is expected to increase, thus exacerbating the problem

of providing social services in these areas, where the elderly are scattered and there are too few people to work in these services.

Because of these drastic and rapid social changes, there are two contradictory factors related to aging in Japan. While respect for the elderly is still regarded as an essential virtue of Japanese society, social services for the elderly are less developed than in other industrialized countries (Maeda 1993). In particular, there exist a relatively small number of nursing home beds, retirement communities, and home assistance resources for disabled or infirm elderly are scarce. This contradiction can be reconciled by the fact that daughters-in-law traditionally were expected to care for aging in-laws, since having someone else do this would be interpreted as a rejection of filial piety. Thus, the cultural duty to respect the aged falls upon daughters-in-law, who embody the social value of respect for the aged, and relieve others of the actual responsibility for care. Respect for the aged is performed socially through daughters-in-law. Because of this tradition, which has begun changing only recently, extensive social services for the elderly may be perceived not to be necessary.

In 1983, the Old Age Health Act was initiated to alleviate some of the pressures of the increasing use of health resources by the elderly (Sonoda 1988). The Act shifts the burden of costs from taxes to the insurance premiums of other national programs such as society health and mutual aid. It provides low cost check-ups to those over the age of 40, and controls the use of services by requiring elderly patients to pay out-of-pocket a certain fee for the first clinic visit and as well as a small fee for each day of hospitalization. It controls hospital profiteering by diminishing reimbursements based on

the length of the stay of the patient, and encourages home care (by daughters and daughters-in-law) by providing discharge planning, day-care, and home health services.

Contributing to the problems of a large proportion of nonwage-earning individuals in a society is the mandatory retirement age between 55 and 60 imposed by most Japanese companies. It is argued that 50% of the Japanese labor force is under an early, fixed, mandatory retirement age (Maeda 1993). Because the national pension plan begins at age 60, some forced retirees must look for other work after they retire, work which is usually lower paying, lower status, and irregular. Thus, despite the mandatory retirement age, 71% of men and 39% of women between ages 60 and 64 are in the labor force. However, these high rates of elderly participating in the labor force cannot be explained by the mandatory retirement and pension rules alone. The high labor force participation of Japanese elderly is due also to traditional values and a lack of any other means of life satisfaction, since most of the Japanese elderly of today did not have time to learn how to enjoy life while they were in their middle age (Maeda 1993).

A study of the activities of retired Japanese elderly showed that their proportion of hobbies is significantly lower than those of elderly in other industrialized countries. Maeda (1993) suggests that the lives of Japanese elderly in the past were harsh and they did not have time to get used to reading books and other leisure activities. However, they also have many opportunities to learn traditional Japanese arts, such as flower arranging, tea ceremony, and *bonsai*. Most of their free time is spent working to earn an income, doing activities with the family with whom they live, and watching television. Japanese elderly are less active and more socially withdrawn than those in Western countries, behavior which is in part encouraged by social expectations that the elderly are quiet and



meditative, rather than bustling and active. Further, many traditional arts hobbies (e.g., *bonsai*, flower arranging) can be enjoyed alone, which may account for less social activity among Japanese. Elderly Japanese often have meaningful social roles, such as taking care of grandchildren and helping with their children's work. Most Japanese elderly are satisfied with their present lives.

#### *Programs for the Elderly In Japan*

Programs for the elderly in Japan include Income Maintenance Programs, such as public pensions and public assistance (Maeda 1993). Health services include Health Check Services, which are provided by law by local governments for all individuals over the age of 40. There is also a Medical Care Service where elderly aged 70 and seriously impaired elderly between 65 and 70 can receive necessary medical care for a nominal fee. Community Rehabilitation and Reactivation Services are provided by local day-service centers, and national law requires that local governments provide health education to senior citizens. Life Satisfaction programs for the elderly include Job Services for Older Workers, Old People's Clubs, of which more than 40% of the nation's elderly are members, and Community Welfare Centers for the Elderly, which provide health, income, education, and recreation services. Neighborhood Welfare Centers are similar to Community Centers, but serve a smaller area. Care Services include Home-Help Services, Respite Care Service, Day Care Service, Visiting Bathing Service, and Provision of Special Equipment. There are also Loan Funds for those who want to add a room or improve an existing room for an elderly parent can borrow money from the local government with little or no interest. Unlike North America and Europe, in Japan meal services are still in experimentation and demonstration stages.

In Japan, institutional care services are inadequate, with a severe shortage of nursing homes and beds for bedridden or seriously ill elderly (Maeda 1993). There is also limited housing for the elderly. A "Ten-Year Gold Plan" was developed in 1990 to improve resources for the elderly, including more nursing homes, community senior centers, sheltered housing for seniors, and a number of other programs to facilitate caretaking of the elderly by families, and to improve the lives of the elderly Japanese.

#### *Health of the Elderly In Japan*

A study of healthy urban elders (Hatano et al. 1988) showed that height and grip strength began decreasing at age 75. Height shortening was not limited to the spine, and was less in individuals who usually engaged in sports and often ate protein rich foods like meat and fish. Hypertension was evident in one-third of men and women and increased to 40% at age 75. A diet survey in the same population showed that 95% of the subjects ate rice five or more days a week. About 55% ate bread three or more times a week. Fish was the major source of protein, consumed three or more days a week by two-thirds of the subjects, although half ate meat three or more times a week as well. Hatano et al. (1988) suggest that these dietary patterns are halfway between Japanese and Western ones. The city offers free milk delivery to elderly living alone, and milk was consumed daily by 40% of the population.

Fewer than 10% of women drank alcohol daily, although one-third of the men did. Most of the elderly paid attention to their lifestyles by getting enough rest, eating adequate amounts of protein, refraining from salty food, choosing vegetable fat instead of animal fat, walking, taking light exercise, and taking fewer hot baths (Haga 1983a in Hatano [1988]). Nearly half of the elderly had pain in some part of their body. More

women than men, and more at age 75 than 70, complained of pain. These elderly are used to living with pain, as less than half consult a doctor and 30% ignored the pain. The most frequent sites of pain were the lower back, knee and the shoulder.

In this population, nearly half of the men were college graduates, and half the women had graduated from a middle school or college. Most of the lifetime occupations for the men were large enterprise or government specialist, technical or management jobs. Only 5% were in agriculture.

These results represent an urban sample of Japanese elderly who, as stated before, have had quite a different life course trajectory than those in rural areas. While there may be some overlap in symptoms and lifestyles between rural and urban populations, the differences are significant enough to urge studies to evaluate the long-term health of rural Japanese.

Despite the availability of programs for the elderly, other evidence suggests that there is little emphasis on voluntary involvement in health care activities and elderly people's commitment to incorporating health promotion into their daily lives (Sonoda 1988). While there are physical examination programs, these go little further than performing laboratory tests and detecting anomalies. However, Japan is in period of devoting increasing attention to the needs of the aged, in anticipation of the unprecedented increase in the number of elderly who already comprise a significant portion of the population. While Sonoda (1988) argues that health promotion is not a priority in people's daily lives, an observation corroborated by the research conducted by Haug et al. (1991) on Japanese self-care practices, it might also be argued that the number of television programs devoted to health and the amount of consensus within the

country about healthy foods and activities suggests that people are at least aware of current opinions on appropriate health behavior. Further, it might also be suggested that healthy behaviors may be incorporated into one's lifestyle so seamlessly that one does not think of a particular behavior as healthy or not, but rather just an aspect of daily life. If so, surveys that attempt to tease out the conscious health behaviors of Japanese might miss those whose lifestyle habitually engages them in health promoting activities. In any case, the literature shows that much of the research is conducted in urban areas, and that the results of these studies reflect the attitudes and behaviors of city dwellers. The lifestyles of the residents of small, rural, agrarian communities is likely to differ from that of the city, both in terms of lifestyle and health attitudes and beliefs.

#### The Case of Okinawa

The case of Okinawa warrants attention in a study of longevity and diet because it is the prefecture in Japan with the highest longevity. In fact, the life expectancy for women in Okinawa in 1995 was 84.94 years and for men was 82.84 (Japanese Ministry of Health and Welfare and Okinawa Prefecture Department of Health and Environment in Cockerham et al. 2000). The corresponding life expectancy for Japan overall was 82.84 for women and 76.36 for men. When Okinawa is disaggregated from the overall Japanese life expectancy statistics, it is clear that Okinawa contributes significantly to Japan's status as having the longest life expectancy in the world.

These findings are ironic for several reasons. First, Okinawa is the poorest prefecture (of 47) in Japan. Most studies of longevity show that the most affluent populations have the highest life expectancy, even between upper and upper middle class echelons of socioeconomic status (Cocherham et al.2000). Further, Okinawa is the most

recently created prefecture, admitted to Japan in 1879, although feudal Japanese warlords conquered Okinawa in 1609 and imposed Japanese control over the island's foreign affairs (Cockerham et al. 2000). Between 1890 and 1940, a deliberate program of assimilation was enforced in which Okinawan dialect and culture were suppressed. Although prejudice diminished after World War II (during which one-third of Okinawan civilians were killed), Okinawans are still one of several groups that are explicitly recognized in Japan as deviating from "Japaneseness." In fact, Okinawans are a different ethnicity from "mainstream" Japanese (Yamori et al. 2001), and speak a dialect of Japanese that is quite different from that spoken on the four main islands to the north.

Researchers attribute Okinawan longevity in large part to diet. The traditional Okinawan diet has a core of Chinese food culture, with inputs through food trade with Southeast Asia and the Pacific (Sho 2001). The strongest Japanese influence is in eating style and presentation. The traditional Okinawan diet differs markedly from traditional Japanese, with the largest energy intake from the Satsuma sweet potato, as well as a large amount of plant foods such as seaweeds and herbaceous plants. Okinawans eat raw sugar and strongly believe in "food as medicine." In historically vegetarian Japan, a significant difference between Okinawa and Japan is the central role of pork in Okinawa. Pork, tofu, and *konbu* (kelp) are essential components of festival foods, and tofu and seaweed are eaten daily. Japan has assimilated features of Okinawan cuisine, such as *yakiniku* (grilled pork) and sweet potato, which became a local speciality in Kagoshima Prefecture in Kyūshū, and in certain areas of Japan, particularly Kyūshū, *nigagori* (*Momordica charantia*) is popular.

Although Okinawa has the highest rates of longevity in Japan, there are patterns of longevity associated with other parts of southern Japan, particularly the island of Kyūshū. While the average number of centenarians per 100,000 is 14.09, Kumamoto Prefecture, Kagoshima Prefecture, and Saga Prefecture, all in Kyushu, have the highest numbers of centenarians per 100,000 (Asahi Shimbun 2002). Okinawa Prefecture has 39.5 centenarians per 100,000. The interactions of lifestyle, diet, climate, and culture that create this trend of longevity in Okinawa and Kyūshū need further investigation.

## Chapter 5: Self-Care

In 1989, *Social Science and Medicine* devoted its 29<sup>th</sup> volume to the topic of self-care. Since then, very little social science literature has addressed the issue. This lack of attention may be attributed, in part, to the difficulty of settling on an operational definition of the term that can provide a basis for comparative studies in the future. Many publications addressing self-care are empirical investigations of behavior, often from a perspective attempts to learn if these behaviors will help or hinder professional biomedical interventions. Few manuscripts submitted to the special issue of *Social Science and Medicine* in 1989 focused on theory and concepts or addressed methodological issues in self-care research (Dean 1989a). One suggestion for the seeming lack of interest from the social sciences is that while “self-care” is an active term within and outside formal health care services, the subject in sociomedical research is being absorbed into discussions of wellness and health promotion, which are ostensibly less threatening to health care professionals (De Friese in Dean 1989a).

Most authors preface their studies by bemoaning the lack of literature and operational definitions, and then proceed to offer the definition created for that particular study (Segall and Goldstein 1989; Haug et al. 1989; Dean 1989a,b). Dean (1989a) suggests that there is a consensus emerging in the literature that views self-care as encompassing a range of behaviors employed by individuals to maintain or restore their health. Some researchers pose individual behaviors against professional care as the distinction between self-care and other kinds of care, but Dean argues that this approach fails to recognize the range and importance of self-care, for even medical contacts do not occur without symptom evaluations and decisions made by an individual before

contacting healthcare providers. This consensus is vague enough, as well, not to articulate whether behaviors performed under the directives of health care professionals are included in a definition of self-care, since on one level, these are autonomous behaviors (as the literature on compliance suggests), but on another level, can be argued to be merely the actions of the physician by proxy.

Since self-care is not a new concept, but is rather the oldest and most widespread of human behaviors that affect health, the coining of the term reveals the changing role of individuals in health care that emerged over the last hundred years (Dean 1989a). As the germ theory came to dominate medicine, the role of individuals and social environments became irrelevant. Health was the domain of professionals who either prevented diseases with immunizations or treated them with chemicals or surgery. Recently, the limitations of the disease model of health have become increasingly recognized, and renewed attention has been focused on individuals, rather than bodies. Further, the major health problems of industrialized societies are usually long-term chronic conditions that depend on effective self-care for maintenance of function and residual health. A fundamental research question to emerge transforming societies shaped by chronic diseases and economic and political constraints on access to care is: To what extent does our knowledge about self-care contribute to understanding the processes that maintain health in individuals and populations (Dean 1989a)?

What is known about self-care is substantial but not specific. Most information gleaned is from studies investigating other issues. The lack of specificity contributes to the problem of conceptual, methodological, and theoretical development in the area. It is well-known, for example, that personal behavioral practices influence health and



longevity, but less is known about how these behavioral influences interact to produce patterns of self-care (or self-detrimental) practices. Practices to promote health and those to self-treat illness are often unrelated (Dean and Haug 1989), yet little is known about behavior consciously undertaken to promote or protect health.

Studies of complementary and alternative medicine, a growing field since the early 1990s, has contributed to understandings of self-medication of real and perceived illnesses. Even so, in a disease-treatment oriented society, research dedicated to understanding general practices of health promotion and maintenance are less appreciated than cause-effect empirical studies where the variables can be more tightly controlled. Yet, many anthropological, sociological, and health services studies showed that the majority of all care in illness is self-care, at least in the United States (Mechanic 1983). Again, even this assertion is confounded by the multiple interpretations of the meaning of self-care.

Dean (1989a) argues that a potentially fruitful area of research in the area of self-care is the persistent and growing gender differences in longevity. While emphasis in this line of argument is on the social factors that produce these gender differences, it should be suggested that an examination of the intersection of biological and social factors producing patterns of health may be even more fruitful. Indeed, the role of self-care practices in aging individuals is growing in interest not only among social scientists, but also among health care providers, policy makers, and insurance providers as the proportion of elderly in populations steadily increases throughout the world. This increase in aged individuals places new challenges and burdens on formal health care systems to meet the unprecedented demand for care for the health concerns of aging

populations. Research on self-care practices of the elderly are virtually nonexistent, even though the tendency has been, at least in the U.S., to associate old age with disease and illness (Estes 1989). Further, it can be suggested that the elderly grew up in a time when home remedies were the first recourse in times of illness, while the availability of over-the-counter pharmaceuticals and other products for self-treatment has only increased over the years.

One study of the self-care practices of the elderly adapted from the Health Belief Model to investigate preventive health behaviors. This study took into account demographic and social psychological variables, respondents' perceived seriousness of a possible disease, their perceptions of susceptibility, and the perceived benefits of preventive action (Haug et al.1989). These variables are hypothesized to influence health behavior. While this model was originally designed to explain preventive health behavior, it has been applied to a range of health behaviors, including self-care.

Borrowing from concepts in the Health Belief Model, the theoretical model underlying the report suggests that self-care actions will differ depending upon whether the symptoms are perceived as serious and/or self-treatable. How an individual evaluates his or her health is an integral component to how these symptoms are perceived. Persons who are vigilant about their health and engage in "good health" practices ostensibly should be able to distinguish between symptoms requiring physician attention and those that are amenable to home treatment, whereas those individuals who are chronically ill and/or evaluate themselves as being in poor health may seek a doctor's care for any new ailment. A second explanatory concept borrowed from the Health Belief Model for self-care practices deals with an individual's attitude toward physician care. The efficacy of

physician care, level of faith in doctors, claimed experience with prior medical error, and self-reliance in health care are all factors that contribute to potential engagement in self-care practices, according to Haug et al. (1989). Further, the attribution of symptoms as an inevitable consequence of the aging process might also discourage choosing to visit a physician under the presumption that nothing can be done. In short, it is suggested that the more negative the views of physician care, the higher the likelihood of self-care. One question generated by this research is how an individual decides a symptom is serious. The study found ethnic differences in calling symptoms as serious, as minority respondents considered half the listed symptoms to be more serious than did Caucasian respondents. However, gender, age, and cohort variances correlated with only a few of the symptoms.

Green (in Segall and Goldstein [1989]) argues that there has been an increase in the visibility of self-care, rather than an increase in the prevalence of self-care behaviors. Moreover, some argue that self-care is the primary form of health care for most people, with professional care supplementary to self-care practices. This is a radical perspective considering that much of the research on self-care is usually framed from the perspective of professional biomedical care, whether deliberately or as a function of biomedical hegemony. The little research specifically on self-care, as well as other research agendas that address self-care practices (e.g., the use of alternative and complementary medicine), is often concerned with the implications of self-care on the efficacy of allopathic professional care. Most of the studies are empirically or clinically based (such as drug-herb interactions), and few, if any, examine the cultural bases of self-care practices with

more than a cursory acknowledgement of ethnic differences in health beliefs, physician relationships, and self-medication practices.

### Self-Care in Japan

Only one study to date systematically investigates self-care practices in Japan. Haug et al. (1991) attempt to compare self-care practices in Japan and the U.S. to understand cultural patterns of self-care since the two countries are leading Eastern and Western industrial societies, with similar economic structures, levels of industrialization, medical technologies, medical care organization and delivery systems, and epidemiological statistics, but with differing historical backgrounds and belief systems.

Similar to the study on self-care in elderly Americans (Haug 1989), this study also used the Health Belief Model as a theoretical foundation for analysis, and also examined self-care practices of the elderly. In both Japan and the U.S., 900 people aged 45 to 75 were interviewed. In particular, the study investigated four questions: 1) what are the differences between American and Japanese older people in the experience of symptoms? 2) what are the differences in the use of self-care for these symptoms? 3) what are the differences between the two countries in factors that would explain differences in self-care to treat symptoms? and 4) what are the differences between the two countries in the joint effects of these factors on the use of self-care?

The authors argue that these results will test the generalizability of the conceptual model of self-care beyond a single society, as well as offer clues to the social and cultural factors implicated in personal health care decisions. The Japanese and American versions of the questionnaires and interviews were identical. The study shows that older adults in Japan report fewer symptoms than those in the U.S. and are more likely to use self-

treatment for the perceived symptoms, even when considered more serious. The differences might be attributed to Japanese lower rates of emotional ill-health, lower desire for information about their own health conditions (although they are avid consumers of general health information), and less preference for physician care. Most older adults in both countries were nearly identical in evaluations of their own state of health, although the Japanese were less likely to engage in what the authors termed “good health practices.” Even though the Japanese report themselves as being in good health both objectively and subjectively, they also report poorer diets, higher rates for cigarette and alcohol use, and lower levels of exercise (although higher levels of exercise, such as walking, are incorporated into the lifestyle of Japanese and may not be considered “exercise” by respondents per se). The authors attempt to resolve this discrepancy by arguing that these poor health behaviors do not necessarily result in immediate poor health, so an individual can report good health while engaging in detrimental behaviors. Japanese have both a higher use of physician care and self-care than Americans depending upon the seriousness of a condition. Whether or not Japanese are in fact healthier is debatable as another view suggests that older Japanese are merely reticent about admitting to psychological distress or ill health, or may have different ideas about when a bodily change can be considered a symptom.

In sum, while the Japanese have a higher rate of exclusive physician care, this is coupled with an even larger reliance on self-care than in America. The study does not elucidate the kinds of self-care practices Japanese use to treat symptoms, nor does it explain the congruence of the methodology and theoretical underpinnings with the

cultural and personal health beliefs of elderly Japanese, both important factors to consider when attempting to understand the health behaviors of an individual or society.

Lock (1980;1993) examines Japanese health behaviors in two ethnographies. The first investigates Japanese use of *kampō*, the Chinese-derived traditional medical system of Japan, while the second considers Japanese women's experience with *kōnenki* (glossed as "menopause"). In *Encounters with AgIng: Mythologies of Menopause In Japan and North America*, Lock (1993) reiterates the assertion of Haug et al. (1991) that Japanese are extremely health conscious and feel responsibility for their bodies. However, according to Lock (1993), middle-aged Japanese women, in fact, demonstrate a lower use of medical services, choosing not to have regular check-ups and using medical services only when they become seriously ill. They also have a low rate of using prescribed medications, although Japanese physicians are known for prescribing large amounts of pharmaceuticals, in part because it is a lucrative source of income for them. Japanese women use fewer pain relievers, sleeping pills, and vitamins than the North American women in Lock's sample. However, twice as many Japanese women use nonprescription stomach remedies compared to North American women. Further, Japanese women frequently use herbal medication and health teas, some of which they state are prescribed by physicians.

The self-medication practices in Japan listed by Lock (1980) include moxabustion, massage, bath as therapy, folk botanical medicine, botanica medicine from pharmacists, patent medicine, tonics and/or vitamins, synthetic drugs (nonprescription), care with diet, and care with exercise. Botanical medicine is strongly associated with food, and while some preparations must be made especially, most can be taken as a part

of a well-balanced diet. The traditional *kampō* herbs *shiso* (beefsteak), rhubarb, peppermint, fennel, and cinnamon are often used medicinally in the home.

Little is known about *rural* Japanese attitudes about health and aging; most of that knowledge is derived from research into other areas, such as menopause (Lock 1993) or population aging (Maeda 1993). In fact, much of what is known about people's self-care practices is based on specific pathologies or health concerns. Health maintenance, too, often assumes the rubric of "prevention," thus implying the myriad of problems one expects to encounter without such diligence. Rural Japan is less cosmopolitan and more traditional than the country's urban areas, although emphasis on national consensus and stable infrastructure for information dissemination has ensured that rural areas have not remained untouched.

### Food as Medicine

Literature on food as medicine generally comes from research in nonindustrial, agrarian or hunter-gather societies (Etkin and Ross 1991; Etkin 1996; Cox 1994; Johns 1990). While food and medicine categories are discrete, a single food item (usually plant) can be a food or a medicine depending on the context and/or quantity of use. In the opposite vein, modern societies commonly represent food as a pathogen, as a source of disease and ill-health (Lupton 1996). While the context of use is not as integral as much as its inherent qualities, certainly a single food item can be considered to be both sustenance and pathogenic, depending upon the health status of the consumer, personal values, and again, quantity of consumption.

Foods are not merely categorized as unhealthy, but are understood to harbor specific health-threatening substances such as cholesterol, salt, fats, additives and

preservatives, and contaminating for bacteria they may breed. Consumption of junk food by children has been linked to behavioral disorders. When food is conceived as medicinal, or at least really healthy, it usually receives special accolades for its abilities. Truly medicinal food must be more than what one can purchase at the supermarket, although some foods are touted for their important, medicinal qualities, such as dairy for its high levels of calcium that will prevent osteoporosis in older women and “green, leafy vegetables” for their high amounts of healthful antioxidants. While conflating “healthy” with “medicinal” may seem to be an artificial category, in societies where the practice and distribution of medicine is regulated, the conflation of the two may be as close as researchers can get to discerning how members of these societies use the foods available to them for therapeutic purposes. Moreover, the range of this can vary from being certain to include a certain food in one’s diet because of its perceived health benefits to megadosing on certain foods for the same reason.

A future area of inquiry may be the changing categories of food and medicine as societies modernize and medical practice either becomes dominated by biomedicine and/or privatized and controlled. Japan is a nation that modernized so rapidly that traditional beliefs about food and health are still in the process of syncretizing with the introduced including biomedical.

### Food and Identity

Social scientists have long realized the role of food in creating and sustaining cultural and social identity. Through the production, distribution, and consumption of food, we act out our most important relationships to family, friends, the dead, and the gods (Counihan 1999). Lupton (1996) states that food practices are central practices of



the self, directed at self-care through the continuous nourishment of the body with foods that are deemed culturally appropriate. At the biological level, the substance of our bodies is made from the foods we eat, and thus, by taking food into the body, we take in the world (Bakhtin 1984 in Lupton [1996]). Food, in fact, is a liminal substance that exists on the boundaries between self and world, internal and external. To add another element of analysis, it is also on the boundary between purity and impurity, concepts which are central to Japanese traditional cosmology, and subsequently to food aesthetics and preferences.

As we construct our relationship to nature through foodways, we are also defining ourselves and our social world (Counihan 1999). The relationship between food and identity plays out in social class, gender, ethnicity, and even age. Food has often been used to make distinctions between upper and lower classes, such as the brown bread of the peasants in England or the white rice of the aristocracy in Japan (Ohnuki-Tierney 1993). The lower classes continually try to emulate the upper classes food practices and preferences which results in the upper class food disseminating throughout the society and becoming common fare. As this happens, the upper classes repeatedly change their tastes to preserve their class status.

Sutton (2001) expands the understanding of food as a means of sustenance or class distinction to a way to remember oneself as a participant in a shared cultural history. Food is an essential component of associations with a "homeland," an ethnic identity, a cultural history. Not only does the consumption of food remind people of the passing of time and seasonal cycles, it also contributes to creating "prospective memories." Food orients people toward future memories that will be created with the consumption of food.

This is particularly profound in cultures that eat seasonally because of growing and harvesting seasons as well as in societies, like Japan, with a traditional preference for seasonality in diet, even though many foods could be made available year-round. Because of the strong seasonal associations and/or the traditional cosmology emphasizing the balance of opposites (e.g., *yIn-yang*, hot-cold), certain food items are preferred to be consumed during a prescribed time.

Connerton (1989) argues that collective images of the past, such as those of a master narrative of a cultural history, are conveyed and sustained by ritual performances. For example, meals are ritual performances, with relations between meals that allow the continuity of performance to carry meaning to the participants (Douglas 1975). A meal must also carry not only memories of one's own lifetime, but must also carry a shared memory of a cultural tradition. This collective memory is created by many participating individuals, and that the schism between the individual memory and the collective memory must collude to produce a shared sense of history or tradition. Thus, the individual, and even solitary, act of consuming certain foods can, in fact, also be a ritual performance, to which one is habituated through daily practice, of one's participation in a larger culture, and even the "imagined community" (Benedict 1983) of a nation, like that of Japan, a topic which is addressed in the next chapter.

## Chapter 6: Japan, Health, and Diet

### Japanese Health Cosmology

In 1883, Japan adopted the Western medical system, which since then has become the dominant health care delivery system in the country. However, Japan's long legacy of indigenous health beliefs and practices, as well as those adopted from China, established a foundation of health beliefs quite different from biomedicine, and which still influences the health and disease related conceptions and practices. There is likely a syncreticism of traditional and modern medical health beliefs.

*ShIntō* (the indigenous animistic religion of Japan), East Asian, and cosmopolitan medical practices influence Japanese conceptions of health and disease (Lock 1980). Illness is imbalance between the individual and the environment, where the natural flow of energy has altered to the detriment of the individual (Caudhill 1976). One of the primary external forces in Japanese health cosmology is *kaze* (wind) (Ohnuki-Tierney 1984). *Kaze* is also the term used to describe a number of respiratory illnesses, such as cold, flu, and strep throat. Internal imbalance is also caused by other factors. Many Japanese avoid cold foods, such as ice cream, cold drinks, and other foods and drinks that are cold in temperature (Ohnuki-Tierney 1984), although this avoidance has declined over the last 20 years. Humoral imbalance as etiology also explains the Japanese traditional belief that the periods between the seasons are dangerous to a person's health. Because drastic changes in climate are likely to take place, an individual is more susceptible to imbalance. In particular, the period when leaves are budding in early spring is the transitional time from the cold to the warm season and when people, especially the sick and the elderly, are particularly susceptible.

Japan has a long legacy of self-responsibility for health, inspired by Confucian and Chinese thought, and indigenized to be culturally salient to Japanese. In the 17<sup>th</sup> century, the Japanese scholar Ekiken wrote an eight-volume treatise on health preservation that was so highly regarded that its style was used as a basis for the translation of the Bible during the Meiji Period (1868-1912). In Japanese tradition, it is a fundamental element of filial piety to preserve one's health. Indeed, even harming one's skin or hair which are considered to be parental bequests, is an act of disrespect to one's parents. Ekiken states that an early death that begins with the belief that one's life is one's own, leading to free indulgence in food and drink and carnal pleasures is an "absolute folly." Thus, preserving health is not only a matter of wishing to achieve longevity, but is a moral compulsion. Even today, group exercise is integral to almost any organization to which one belongs in Japan. This set routine of stretches seems to be almost universal across Japan, from elementary school through elderly day-care centers, adjusted for individual capabilities. These exercises take less than five minutes, and are meant to maintain flexibility, which is considered to be a fundamental indicator and preserver of health.

Japanese over the age of 40, in particular women, are most familiar with traditional medical ideas (Lock 1980). Although there may be conflicting health beliefs expressed within a family, people do not see traditional and biomedical beliefs as mutually exclusive. Although some lean toward one system or another, few rely on only one system. Many of Lock's informants expressed a renewed interest in traditional health beliefs and practices.

The Japanese term for health—*genki de*—literally means “original *ki*” whereas the word for sick—*byōki*—means “sick *ki*” (Kalland 1991). Health is thus the notion of the mind and body being healthy in its original condition. The traditional notion of *ki* derives from the ancient Chinese concept of *Qi*, the universal energy that flows within and between everything in the universe, and which must be balanced within and outside the body for health. Infants are believed to embody ideal health in their “natural” state of gentleness, passivity, and dependency, and mothers seek to encourage this state for their infant’s health (Lock 1980). From the age of four years, children in middle-class Japanese families are trained to develop an inner calm and stability, and to learn to be personally responsible for bodily functioning, emotional state, and immediate surroundings. These socializations are premised on the belief that maintaining such an inner calm and stability nurtures balanced *ki*, since sickness stems from poor or unbalanced *ki*.

Because Japanese are raised to be sensitive to their body’s functioning, most Japanese can make fine distinctions between their bodily states. Further, Japanese believe in the concept of an “inborn constitution” which is essential to know about oneself to practice preventive medicine as well as receive any kind of care based in East Asian medical traditions, such as *kampō*. The concept of *ki* is a fundamental underpinning of these conceptions. The lay understanding and use of *ki* is different from the meaning of the concept in *kampō*, but both are derived from the same concept of a dynamic exchange of energy that allows the fixed constitution, or body type, to move between the normal states of health and ill health (Ohnuki-Tierney 1984). A state of balance is the norm, but

achieving this balance is a constant endeavor. Even ill health is a part of this process, for as long as the *ki* is not changed, it is merely out of balance, and can be restored.

Although both boys and girls are indulged as infants and the passive dependency of *amae* encouraged, when women become the central caretakers of the family there is little room for their own dependency needs. Many believe that wives must not get sick and must keep going when they get tired. Lock (1980) suggests that it is not surprising that women in these circumstances are more interested in preventive medicine than their husbands.

The theoretical underpinnings of Traditional Chinese Medicine (TCM) also form the basis of *kampō*, which evolved in Japan to become distinct in diagnostic and treatment methodologies, although the basic cosmologies of the two are still congruent. This cosmology also forms the basis of much of the thinking about the body and health in Japan, so that self-care practices are often more influenced by the conceptual basis of *kampō* than by biomedicine, although Japanese tend to seek biomedical care and consume biomedical pharmaceuticals in far greater proportions than *kampō*. However, the gap has gradually narrowed since *kampō* became supported by the National Health System in 1976 after years of banning and marginalization since the introduction of biomedicine in the 19<sup>th</sup> century.

Traditional Chinese Medicine, *kampō*, and folk beliefs about the body are similar in their emphasis on maintaining the balance of the body as a means to health. Although TCM differs in its conceptions of physiology, *kampō* practitioners and lay Japanese think about the body in terms of biomedical physiology, to which these concepts of balance have been applied. Similar to TCM, the organs are conceived more as processes than as

anatomical objects, so a discussion of the effects of a food on the spleen and stomach refers to the effects of the food on the balance of these processes with the rest of the body and the external environment. However, the ubiquity of biomedicine in Japan has facilitated a syncretism between biomedical anatomy and *kampō* cosmology and therapy.

In modern Japan the classical concepts of the organ systems have blurred with that of the biomedical anatomical structures. For example, Lock (1980) suggests that the symbolic significance of the *hara* has been transferred to the anatomical stomachs. Concern about stomach diseases is greater than other diseases because it is believed that if the stomach is functioning poorly, the whole body will be out of balance. Cancer is the leading cause of death in Japan, with stomach cancer the leading cause of mortality from cancer for females and second to lung cancer for men (Japan Ministry of Health and Welfare 1995). These high rates of stomach cancer in Japan are a familiar concern for Japanese.

While high cancer rates are in part attributed to diet, as well as genetics, it is also notable that the stomach to Japanese is a site of great cultural significance, occupying the place corresponding to that of the heart in Western culture. Heart disease is a major concern in the United States, while stomach cancer is often a feared disease in Japan, suggesting cultural meanings beyond biomedical pathology. The early East Asian medical paradigm believed that if the stomach and spleen were treated therapeutically, then the whole body would be harmonized. (The stomach and spleen do not correspond to the anatomical structures of biomedicine, but taken together correspond to the abdominal region.) Japanese pharmacopoeia, traditional and modern, list more kinds of stomach medicine than anything else. The emphasis on *hara* was further cultivated in the

martial arts and cult of the samurai, and in the Japanese language, many words refer to both *ki* and *hara*.

Despite the idealization of Traditional East Asian medical precepts in North America and Europe for its “holistic” view of the body and health, in practice, at least in Japan, the attention of both physician and patient are focused on the symptoms of the body and its treatment. One reason is the extreme time pressure physicians experience when seeing patients (typically less than three minutes per patient), and another is the pay structure, which encourages physicians to focus on physical interventions (Lock 1987).

The most significant difference between biomedicine and *kampō* is the emphasis in biomedicine on diagnosis, and in *kampō* on treatment of symptoms (Ohnuki-Tierney 1984). *Shōkōgun* is the term for a cluster of symptoms, but which may not indicate a syndrome indicating a specific disease as it would in biomedicine. Unlike the emphasis of the pathology of a specific organ or body system, imbalance is the fundamental “cause” of all illnesses. The basic treatment in *kampō* is the regulation of daily habits, of which diet is considered the most important. There is a rule to avoid excess as well as specific dietary rules for particular health problems. Like Lock (1980), Ohnuki-Tierney (1984) argues that *kampō* is increasingly popular in Japan, in part because of the support of the National Health Plan, but also because of the perceived lack of side effects compared to biomedicine and because *kampō* medicines are made from herbs they are considered to be more readily assimilated into the body than synthetic drugs. Further, the cosmology of *kampō* is similar to folk ideas about the body and health. Its medicines are like tea, and the emphasis on diet as a major factor in health maintenance is a view also held by most people. As Ohnuki-Tierney states, “*Kampō* merely systematizes and



institutionalizes people's assumptions." However, when discussing traditional Japanese health beliefs, a distinction should be made between the cosmology and practice of *kampō* and folk beliefs, called *mInkanyaku*. Although the cosmologies of the two may be congruent, the materials and practice are not.

### History and Culture of Japanese Food

Wet rice cultivation began in Japan in the third century BCE, and turned Japan into an agricultural society (Ishige 2001). Since that time, rice has held a central place in the culinary value system of the Japanese, and was a key element of the traditional social economy. At present, Japan has a low level of agricultural self-sufficiency, with only 49% provided by domestic products. Further, farming households make up only 10% of the national population, and now Japan has a self-sufficient capacity for producing only rice, green vegetables, and eggs. However, since the 1960s, when rice consumption was about 171 kilograms per person, the average yearly consumption has declined to 71 kilograms per year. The introduction of other starchy foods to fill the stomach accounts for much of this decline, since the side dishes traditionally were eaten sparingly to enhance the flavor of several bowlfuls of rice. The Allied force imported wheat flour and milk powder to Japan after its defeat in 1945, and the government allocated this food for children's lunches, giving rise to the reputation of bread and milk as children's foods, and laid the groundwork for bread's later popularity as a breakfast food. Since the 1950s, accompanying a tide of culinary changes, bread has been replacing rice for breakfast in about 30% of Japanese households.

A typical Japanese meal consists of three elements: a starch, a soup, and a side dish (Ashkenazi and Jacob 2000). For younger Japanese, the side dish is usually

conceived as some kind of protein (e.g., meat, fish, or poultry) but this was not always the case. The most typical meal of the Japanese is one in which rice is a centerpiece, even though the ubiquity of this kind of meal has declined even in the last 20 years as Western-style breakfasts, for example, have replaced the traditional rice and *miso* soup. Japanese housewives, who are responsible for meal preparation and nutrition for the family, state that rice is central to a proper meal, and that it defines the meal.

For much of Japan's history, cultural, political, and economic influences were derived from China and Korea. In the Nara period (710-794) a system of government was established based on Buddhist ideology, and it was during this time that bans on the killing of any animal were instituted, and which would ultimately shape Japanese cuisine in a significant way. With not only Buddhism but also the indigenous Shinto religion discouraging the eating of meat, a number of Japanese came to avoid it, although fowl (other than chicken) and fish were not particularly avoided. However, game fowl were rarely eaten, leaving fish the sole source of animal protein in the Japanese diet, and giving it a place of honor in Japanese cuisine.

By 1192, the meat taboo had begun to spread among the common people, and lasted nearly 700 years. Eating the flesh of mammals was permissible only for medicinal purposes, and sometimes it was eaten as a tonic by healthy people (Ishige 2001). Generally, deer or boar were the mammals preferred as a medicinal meat, perhaps because of their increasing rarity as their natural habitat disappeared. The lack of a social system structured for production of domestic stock and fowl was lacking in agricultural Japan, and as the population of Japan grew, the expansion of cultivated land drove the wild game from the plains. Thus, Ishige (2001) argues, people grew accustomed to a diet

in which meat was not consumed on a daily basis, and so allowed the Buddhist and Shinto proscriptions on meat-eating to become more pervasive than they might have otherwise.

The late 15<sup>th</sup> to the late 16<sup>th</sup> centuries was an important period in Japan's cultural history (Ishige 2001). Foreign contact during this time influenced Japanese diet with the introduction of pumpkin, sweet potato, cayenne pepper, and tobacco. Sugar started to be imported in large quantities from Southeast Asia and confectionary production began. Some sweets were introduced from Europe and remain local specialties today, such as Nagasaki's *kasutera* (Portuguese Castellan cake). Technology for distilling spirits was introduced to the Ryukyu (now Okinawa) kingdom to make the rice liquor called *awamori*, which was later introduced into Japan and called *shōchū* (Japanese whiskey). Grape wine from Europe became familiar, and European cooking techniques began to circulate.

In 1639, the Tokugawa shogunate enforced a policy of national seclusion. For more than 200 years, the process of change via external stimulus ceased, and Japan entered a phase of internal development in diet and cuisine, as well as other areas of culture. It was during the period of seclusion that what the Japanese consider their "traditional" cooking and eating values were formulated (Ishige 2001). The introduced foods and technologies became indigenized with Japanese culinary and aesthetic tastes and values. When the policy of national seclusion ended in 1868, the Japanese diet again began to change as new foods and technologies were imported. With Japan's rapid economic development after World War II, national dietary habits continued to change markedly.

After the Meiji Restoration in 1868, when the national policy of seclusion ended and foreign goods and ideas poured into Japan, beef quickly became the meat of choice (Ishige 2001). Meat eating was considered a symbol of modern civilization, so rejection of meat was portrayed as reactionary ultranationalism. By the beginning of the 20<sup>th</sup> century, resistance to meat eating was limited to the elderly, and by the 1920s the beef stew *sukiyaki* was considered a national dish. The rapid economic growth of the 1960s brought changes to the traditional diet which was based on rice and vegetables. More fish began to be consumed, and meat began to appear commonly at meals. Japan today consumes far more fish than it did in the years before World War II.

Only one dairy product was used in ancient Japan, the curdled milk product called *so*, and was consumed only by the court nobility (Ishige 2001). When the court culture collapsed in the twelfth century, *so* disappeared. In 1727, the shogun imported three milk cows and bred a herd from them in order to make the sweet, solid food *hakugyūroku* (white butter), which the shogun consumed with his closest retainers. Milk and dairy products did not become a part of the daily diet of the general population until the 20<sup>th</sup> century, although the dairy industry in Japan began in 1863 when a milk shop opened in Tokyo. However, daily milk drinking by the population dates only from the 1950s, prior to which it was only drunk by children, the ill, and those with weak constitutions. Still, Japanese consumption of milk and dairy is far lower than nations with a history of dairy farming, and is limited to beverages, desserts, and yogurt, since many Japanese consider the smell of fermented dairy products to be repugnant.

The avoidance of animal flesh meant that the use of animal fats for cooking was virtually unknown. Sesame was cultivated and processed into oil, but was very

expensive. The absence of oil and fat became one of the distinctive characteristics of Japanese cooking, and the taste of oils and fats became considered “cloying” or “unrefined” (Ishige 2001). Instead of oils and fats for cooking, a culinary aesthetic developed emphasizing that food should be enjoyed as close as possible to its natural state, with the minimum of artificial technique. *Sashimi* is one example of a dish that is not cooked, but whose flavor is enhanced through freshness, presentation, a bit of Japanese horseradish *wasabi*, and soy sauce. Japanese consider *sashimi* to be the most refined example of their cuisine.

The most predominant, and sometimes only, seasoning in traditional Japanese cuisine is based on soybeans. The first record of soy sauce use in Japan is dated to 701. *Miso* is made in a similar way to soy sauce, but *miso* is a paste. Both are made by mixing soybeans with salt and a rice mold fermenting agent called *kōji*. By the 18<sup>th</sup> century, soy sauce had become the principal seasoning for food, and *miso* came to be used exclusively for soup. However, in remote rural districts, *miso* remained in use as a seasoning for daily meals until the early 20<sup>th</sup> century, while soy sauce was used only for festivals and when serving special guests. Spices came into widespread use only since the 1960s. In fact, Japan is the second largest consumer of turmeric after India, undoubtedly due to the popularity of another nationalized dish, “curry rice.”

Tofu and *nattō* (fermented whole soybeans) are consumed regularly, and with the ubiquity of soy sauce and *miso*, nearly every Japanese eats some form of soybean every day. *Nattō* traditionally was made by wrapping small quantities of boiled or steamed soybeans in rice straw, inoculating them with a bacterium, and leaving them to ferment under hot, humid conditions. Scientists isolated *Bacillus nattō* in the early 20<sup>th</sup> century,

enabling the efficient production of *nattō*. A typical, traditional breakfast consisted of rice, *miso* soup, *nattō*, and vegetable (e.g., radish, bracken, cucumber ) pickles, and is still a typical breakfast in the countryside. *Miso* soup originated as a *Kantō* (Eastern Japan) food, and its spread throughout the islands attests to the penetration of metropolitan fashions, but especially, to the homogenization of Japanese culture since the beginning of the 20<sup>th</sup> century (Ashkenazi and Jacob 2000).

Pickles are an important element of Japanese cuisine. The methods for pickling developed in the northern parts of Japan when no food could be gathered for several months each year. There are eight main techniques of pickling in Japan: 1) salt pickling 2) rice-bran pickling 3) soy-sauce pickling 4) *miso* pickling 5) sake-lees pickling 6) vinegar pickling and 7) rice-mold mixed with salt pickling and 8) rice-mold mixed with brine and mustard powder. Although there are several thousand kinds of pickles available, two have spread throughout the country and are the ones most associated with Japanese food. *Takuan* is a daikon-radish pickled with rice bran, while *umeboshi* is a Japanese plum pickled with salt and purple *shiso* leaves. In Japan, *umeboshi* is said to prevent food poisoning, and in China, has been used medicinally since ancient times.

Despite these notable changes in Japanese eating habits since the Meiji Restoration of 1868, traditional preferences remain strong, particularly in the countryside. During the 1930s, 50% of the population were farmers who relied more on a self-sufficient economy than did city dwellers. Their usual diet of fish and vegetables, with meat as a rarity, had such strong traditional associations that it came to be considered an extension of Edo-period customs. Now, only 10% of the population are farmers, and a minority in terms of livelihood and lifestyle, including eating habits and preferences.

Countryside dwellers, particularly those in older generations, tend to prefer more traditional foods, although some recently introduced foods are available and enjoyed, although limited dairy products and snacks, cookies, and candies. Still, introduced foods are usually indigenized to be palatable to Japanese consumers. This process of indigenization ranges from “foreign food slightly domesticated” (e.g., ) to “thoroughly domesticated” (e.g., curry rice) to “Japanese food” (e.g., (Ashkenazi and Jacob 2000).

### Food as Medicine in Japan

The literature on self-care is particularly relevant to the question of how traditional Japanese attitudes toward food and lifestyle influence contemporary health behavior among Japanese. A review of Japanese traditional health beliefs shows that diet and lifestyle were the first therapies for health imbalances. Does this make food a medicine in Japan and the consumption of food to maintain the balance of health self-care? The notion of “self-care” is semantically biased toward biomedicine, since “self” is highlighted to draw attention to the role of individuals in their own health maintenance *In contrast to* the “external” role of the physician. If one’s own role in health maintenance were considered to be a natural and unquestionable course of behavior (as it is argued to be in Japan), this semantic emphasis on “self” would not be necessary, nor would the subject have emerged as a pressing research topic. However, because of the formalized health care delivery systems, usually biomedical, that dominate industrialized nations, making such a distinction is necessary to understanding how people conceptualize not only health itself, but also health care.

Using foods therapeutically as both a mode of self-treatment and health maintenance is common in Japan. Many foods eaten on a daily basis are well known for

their healing or health promoting abilities. While this is the case in Japan, there are some problems with conflating medicine and treatment with health promotion practices. To do so implies that all behavior that maintains or promotes health, even if not treating a specific disease or pathology, is medicinal. This biases understandings of behavior toward disease and illness, rather than as a practice to maintain a normal state of health or balance. Further, it reduces the cultural complexity of food preparation and consumption to concerns about physical pathology. While food certainly overlaps with medicine, this conception is inadequate to describe the health practices of aging rural Japanese.

The Japanese humoral principle of *kannetsu* (heat-cold) also comes into play not only in the medicinal properties of food, but also in the appropriateness of any food at a given time. Because health is traditionally conceived as a balanced relationship between one's constitution and the environment, what may be medicinal for one person may in fact be dangerous to another. By the same token, a food that is medicinal in the summer because of its humoral relation to summer heat may be damaging when consumed in cold winter. For this reason, distinguishing between medicinal and other foods is difficult in Japanese health cosmology. All foods have the potential to be medicinal, although some foods may be considered to be more of a panacea than others (e.g., *umeboshi*).

Although there is a large amount of anecdotal data on Japanese conceptions of medicinal foods, there is less in the literature that reveals a systematic overview of their uses and beliefs. Further, many Japanese beliefs about health are linked to conceptions of purity and impurity, so that certain foods are unhealthy because of their pollutedness (e.g., meat is a historical example of such a food), while others are medicinal for their cleansing abilities. Some common foods renowned for their medicinal properties are



*nattō* (fermented soybeans), *umeboshi* (pickled plums), *shiso* (*Perilla frutescens*), and *ocha* (green tea). Other everyday foods are prepared in a special way to make them medicinal, such as thin rice gruel with *umeboshi* for someone who is weak or ill.

Ekiken (1713), during the period of national isolation, quotes the ancients as saying, “Calamity arises from what we say, and illness comes in through the mouth.” Indeed, temperatures of foods should never be extreme, the way rice is cooked should be appropriate to the constitution of the individual who will consume it, and light, simple meals are preferable to heavy, greasy, rich food. Uncooked, chilled, or hard food should be avoided, and one should not eat very much meat. Further, one should not have partiality in the five tastes of sweet, bitter, salty, sour, and pungent. Various detrimental effects on the body result from an imbalance in consumption of these tastes, such as shrinking vitality (*ki*) from too much sour, listless spleen and stomach from too much bitter, drying up of blood and throat from too much salt. At the same time, these ill effects of overconsumption of one kind of food can be remedied by consumption of a humorally opposite food. The same taste/food that is pathogenic in excess can be therapeutic for the excesses of another. Ekiken (1713) also states one should eat a variety of vegetables and meat, and plenty of rice, although his most often repeated warning is not to overeat.

As a modern, industrialized nation, Japan is subject to similar influences in consumption as other market-based economies. Since the Meiji Restoration in 1868, Japan has had a sustained fascination with the West, and as the economy burgeoned after World War II, people were able to afford the objects and foods that were available previously only to the wealthy. Many new ideas and products enter Japan as a fad,

including medicinal foods. Being well-educated about nutrition is an essential trait of a good mother and housewife, and much health literature is targeted to this population. In 1996 and 1997, for example, *Aloe vera* became extremely popular for its health benefits, and recipes were published abundantly in women's and cooking magazines, including one for *Aloe vera sushi* (Ashkenazi and Jacob 2000). Further, as a modern, market-based society, Japan's material consumption is a means to creating and performing one's identity in society. Food is no exception.

### Food as Identity in Japan

The origins of Japanese identity lie in the historical relationship between Japan and China, in which China was considered by Japan to be the superior culture (Ohnuki-Tierney 1993). Since then, Japan has continuously reconstituted and redefined itself through repeated contacts with outsiders. Allison (1991) states that food is more than just food in Japan, but is appropriated as a sign of the culture. To be Japanese is to eat Japanese food.

Ohnuki-Tierney (1993) argues that rice is the fundamental metaphor for self in Japanese society. The purity of white rice represented the purity of the deities, which was transferred to the Japanese through consumption. The strength of this metaphor has endured to the present, when Japanese resisted the pressure of the United States to import rice from California, even though it was the same species as the "Japanese rice" grown on Japanese soil. The fact that the rice was not grown on Japanese soil made all the difference, and the ability of Japan to be self-sufficient for rice is a powerful metaphor for the perceived stability of the country. Although rice was and is powerful metaphor, historically rice was predominantly the food of the upper classes (Ishige 2001). Peasants

grew rice as a tax currency for the *samurai*, but would still mix small amounts with other grains like millet or barley because of the symbolism of consuming rice. Today, rice remains such a powerful metaphor that many Japanese say they do not feel full unless they have consumed rice at a particular meal or at least once during the day (Allison 1991).

Other foods also carry symbolic meaning for the Japanese sense of self. When encountering Western visitors, in particular, *nattō* (fermented soybeans) is often used as a yardstick of one's "foreignness" by how much it is reviled. Foreigners who do like it are said to be "like a Japanese," even though there are more than a few Japanese who also dislike *nattō*. Green tea is also a marker of Japaneseness, as are *umeboshi*, *sushi*, and *sashimi*.

Overlapping food as medicine and food as identity is the natural foods movement in Japan. This movement is driven by the concern of consumers, particularly mothers, over the use of pesticides or the genetic engineering of foods. Now there are several organic food suppliers in Japan as well as several chains that specialize in organic foods, some of which are suspiciously close to "flogging panaceas and nostrums" (Ashkenazi and Jacob 2000 p. 219). On another level, the natural foods movement in Japan cannot be dissociated from the cultural nationalism movement in Japan, an element of which asserts that Japanese food is the solution for modern ailments. Ohnuki-Tierney (1993) notes the fervent reverence with which Japanese regard their rice as more wholesome and healthy for Japanese bodies than foreign rice. The natural foods trend is one of the strategies that have been employed to revive village life. This revival of the countryside is called *furosato undō* (village/countryside revitalization movement). This often centers

around food, in the form of organic produce, homegrown or prepared, or *meibutsu* (local specialties). Although the natural foods and the *furosato undō* movements combine to renew and preserve Japanese cuisine, and even the traditions of Japanese food culture, in fact they are also reinventing and recreating new forms of Japanese cuisine derived from Japanese traditions or those borrowed from abroad. This readapting and combining with adopted items, ultimately, is the essence of Japanese tradition (Ashkenazi and Jacob 2000).

## **Chapter 7: Findings**

The study findings are described in this chapter. The details of Hachimansō Senior Center offer a context for understanding the daily experience of elderly Japanese. The number of people (about 125) who visit Hachimansō represent only a small sample of the 1,663 people over the age of 65 in Tanoura, but their day each week at the Hachimansō is primarily a time to socialize with friends and to have simple health checks, such as the temperature and blood pressure readings that are measured for each individual each week. It might be considered an extension of the activities of their daily lives at home, perhaps similar to those of the elderly who do not visit Hachimansō each week.

### **Hachimansō**

About 20-25 people visit Hachimansō each day, two to three of whom come every day. Each day, patrons come from one of the five areas of Tanoura: Monday, Tanouramachi; Tuesday, Tanoura; Wednesday, Kodanoura; Thursday, Imuta; and Friday, Uminoura (Appendix D). An individual must be at least 65 years old to use the services offered at Hachimansō, but most of patrons are well into their 70s. The fee to visit is nominal, about 500 yen a day (about \$4.00 U.S.), and for an additional 100 yen, one can use the bath facilities.<sup>10</sup> The Center serves as a place for people to socialize, rest, and have basic health checks.

The majority of the Hachimansō patrons are women, which is not a reflection of skewed demographics as much as the more social orientation of women in the town. In Tanoura, only 57% of the population over the age of 60 are women, but less than 10% of the people who come to Hachimansō are men. Some explain this discrepancy by

suggesting that men are shy and choose not to come. Indeed, observations at Hachimansō show that the few men (except for Mondays, when a significant number of men visit) who come sit by themselves quietly and watch, while the women chat, do crafts, and nap. It is also possible that the men are less healthy than women in this age range, and do not have the energy to spend the day at Hachimansō. Furthermore, male and female activities and relations in Japan traditionally tend to be segregated, so a man alone in a room full of women, after a lifetime of close male friendships and activities, might feel out-of-place and indeed, shy.

When the Hachimansō patrons leave each day, they are given a small package of prepared food, usually vegetables, to take with them. This is notable because this practice emulates the Japanese tradition of giving guests food and gifts to take home when they are departing. Although Hachimansō patrons pay for their visit and all its amenities, part of the purpose of the facility is not only monitoring health and providing a place to socialize, but to foster and maintain a sense of cultural and community identity, of which hospitality is a fundamental underpinning in Japanese culture.

#### Traditional Cosmology and Balance

Traditional concepts of health and the body did not arise frequently in the responses to my questions. Only one informant began our interview by evoking the notion of *wabi-sabi*, a traditional Japanese concept of refinement and appreciation of simplicity, and which can sometimes be translated as a kind of rustic elegance. He said that this is an important basis for health, and that his lifestyle choices and beliefs fall under this concept, and their logic is explained by it.

Other responses did not evoke traditional concepts of health overtly, but rather suggested their roots in traditional Japanese cosmology, such as the emphasis on fish and vegetables, *yIn* foods preferable for aging in Traditional East Asian medical cosmology, compared to the *yang* beef, which is too strong for the weakening, *yIn*-like constitution of aging. One informant corroborated these traditional beliefs when she stated that one's constitution, as well as the constitution of one's nerves, is important when choosing foods.

Others stressed it was important to *baransu* (balance) the body. *Obento* (a box lunch with certain proportions of meat, vegetables, pickles, and rice) was offered as an example of a well-balanced meal. Some do not believe in preventive foods, but rather "balance" in the form of a variety of foods in the diet is what maintains health. Traditionally, a well-balanced meal was indicated by having all five flavors--bitter, sweet, pungent, salty, and sweet (Kaibara 1713)--as well as five colors. In any case, many stated the caveat that one must eat what one likes and noted that their diets had not changed much since they were children. Similarly, others said that whatever is traditional is good for health.

#### Medicine: *Kampō* and Biomedicine

Seventy-five percent of the local physician's patients are elderly, and his comments corroborated those of the Hachimansō patrons I interviewed. Many of my informants take some kind of pharmaceutical from the local hospital to treat a chronic health problem, which was always described in biomedical terms (e.g., high blood pressure, diabetes). High *ketsuatsu* (blood pressure) was a common response to questions about both symptoms of aging and indications for medication. At age 70, a 91-

year old woman began taking a blood pressure medication dispensed by the local hospital. Another woman goes to the hospital two times each week, and takes high blood pressure and heart medication. She has taken this heart medication for two years, but has not changed her diet. Another woman does not remember what the daily medicine she takes treats, but guessed it might be for high blood pressure.

On the other hand, other informants stated that they never take medicine, or only for short illness episodes, such as colds. One described how inexpensive it is to go to the hospital, and said people prefer to get their medicine there, as well as visit frequently for health maintenance check-ups. The local physician agreed, and stated that over-the-counter medicines at the pharmacy shops are far more expensive than National Health Plan supported hospital prescriptions. Several informants stated that they are healthy and do not take any medication, but that usually people need high blood pressure medication. One man told me that he and his wife take vitamins, but that most rural Kumamoto people do not. One informant corroborated this, saying she does not take vitamins, but gets her medicine from the hospital.

Unexpectedly, *kampō* has a much poorer reputation among my informants than I anticipated. A number of informants emphasized that they do not take *kampō* medicines. *Kampō* is too bitter, some perceived, and said that if necessary, they will take hospital medication. Only one person mentioned using *kampō*, and this was a medicine for colds called *kakkontō*. However, one must be careful when taking it because of its potential effects of enlarging or exacerbating an already enlarged prostate gland. *Fukusai* (side effects) were the main reasons mentioned for avoiding *kampō*. In fact, during the summer of 2002 when this research was conducted, *kampō* was receiving very poor press after



several individuals died while taking an over-the-counter Traditional Chinese medicine formula for weight loss. Still, several informants suggested that the wariness with which they regarded *kampō* preceded these recent events.

The physician said he prescribes *kampō* only if there are no side effects to the remedy. Less than 10% of the medicine he prescribes is *kampō*. He considers *kampō* to be effective for chronic problems, but that biomedicine is better for acute diseases. Further, he stated that most doctors have known about the side effects of *kampō*, primarily adverse side effects on liver function, for a long time. These side effects are due, in part, to the necessarily longer period of time devoted to taking *kampō* medication, unlike biomedicine. He warns patients about possible side effects and is careful about prescribing *kampō* as well as monitoring patients who are self-treating with traditional medicines. Even so, some people do believe their physician when told *kampō* has side effects, but some do not.

### Health

Most everyone had general opinions about ideal ways to live and eat for health, and said they learned about health from television, newspapers and books. Although few talked about prevention explicitly to describe their lifestyle and diet activities, those who did had strong opinions. One 71-year old man said that “every day we must take food (for prevention) because if you get sick, it is too late.” He also said that it is better if people start eating preventively at around age 30, but that young people do not like these foods. He had started when he was 50 years old. Similarly, another man stated simply “health is from eating.” One woman has taken care to eat soft foods since she was 58 and became concerned about an ulcer because she believes it is a precursor to cancer. Another does

not eat snacks because she believes it is better for her health not to.

General ideas about maintaining health included sleep and rest, which many people, including the town physician, considered essential. Many said that “resting on the *futon* is good for health and longevity.” Other healthy activities are taking walks, getting up early, and living with family. The physician’s advice to his elderly patients is “Work less, get check ups, and sleep more.” One informant who lives alone talks to vegetables and flowers as friends, while another said that “old people don’t know or understand their bodies so working in the garden is healthy.”

Some informants felt that those who live alone and those who live with family may have different health and aging experiences. For example, if one lives alone, one can eat what one likes, but may also be lonely. The physician suggested that as people age and get closer to death, they may become worried and lonely as they anticipate the separation from their communities and loved ones. They try to maintain a happy spirit because they do not know when might be the last time they see someone.

Tanoura’s hospital physician is concerned that the traditions sustained by rural areas are becoming overly influenced by urban values and trends. For example, convenience stores are increasing in rural areas, and even children who go to school with homemade *o-bento* might buy food at these stores, thus compromising the health their mothers are trying to attain and sustain. Another problem is that the values of *bukkyu* (Buddhism), such as the filial piety that ensured the elderly were cared for by their children, are declining, which may lead to problems in the future.

He often gives food-related advice for healthful living to his elderly patients, which corroborates that expressed by the women at HMS. His advice is, “Don’t overeat. Eat

anything. Take a nap after the meal.” Apparently this is traditional advice, as he cited a proverb in response to that query: “Even if your mother or father dies, take a nap after the meal.” It has two meanings: if one’s parents die, one should mourn, but despite everything should still rest and not work after a meal.

### Boke, Cancer and Other Diseases of Concern

The physician listed in English “cancer, apoplexy, and heart attack” as the diseases he and his patients are most concerned about. Most of the ways to prevent *boke* involve behaviors, such reading the newspaper, watching television, *ikebana* (traditional flower arranging), and spending time with friends. Some suggested that taking walks is one way to keep the mind healthy. One 91-year old woman, an accomplished singer, sings and talks with friends to prevent *boke*. Being by oneself increases the risk of *boke*, so people socialize with friends regularly. Some informants mentioned rice and fish as preventive against *boke*. The beneficial effects of docohexaenoic acid (DHA) were familiar to and cited by many.

In order to prevent cancer, particularly lung cancer, one informant said that he and his wife eat preventive foods every day, such as banana yogurt, *nattō* with *kombu* (kelp) and *shiso* (*Perilla frutescens*), which are known for being good against cancer. They also make efforts to eat onions, rice, and *miso* soup because they believe these foods are particularly effective in preventing cancer.

### Symptoms of Aging

Responses to the inquiry about symptoms of aging were markedly similar. High blood pressure was mentioned often, along with shoulder pain, forgetfulness, and bad knees and legs. Body stiffness, becoming “broken down and fragile,” back pain, and

doing things slowly were other symptoms. One 91-year old woman, the oldest Hachimansō visitor, said spiritedly that only her mouth was left *genki* (lively), eliciting a burst of laughter from the table.

### Ideal Foods and Behaviors for Longevity

#### *Food as Medicine*

Many of the foods listed as specifically medicinal are fermented. *Kimchi* (Korean pickles), *tsukemono* (Japanese pickles), *umeboshi* (pickled plums) vinegar, and *shōyu* (soy sauce) were listed as medicinal foods. One woman said she drinks *shōchū* (a distilled liquor made from potatoes and/or rice) for health every day. Another agreed, saying that *shōchū* is a “medicine for health,” and good for sleeping. A variation was one woman who drinks a bottle of beer at night to get to sleep. Another woman mentioned shrimp as a medicinal food and said that when you are sick, you should eat rice with water and *umeboshi* (a salty pickled plum).

One woman offered me the ingredients for making *miso* soup as medicinal foods, “Three cloves of garlic, shaved bonito [dried *katsuo* for soup stock] flakes, *miso*, and cucumber.” Tanoura’s physician said that garlic and barley and organic vegetables are medicinal foods, and added that colon cancer is increasing because of the modernizing diet.

#### *Vegetables*

The most consistent and emphasized response when asked what foods are good for health when getting older was vegetables. Some respondents just answered “vegetables” as a general category, while others first mentioned the category, and then both with and without prompting, gave examples of specific vegetables. All of the

vegetables listed were season at the time of the interviews. One informant stated that Kumamoto-ken is known for longevity and health, and that rural Kumamoto-style *miso* soup has many vegetables in it, supporting the link between vegetables and health.

Apples and garlic were mentioned as being specifically good for health when aging, as were onions, *karaimo* (sweet potato), cucumbers, spinach, *shiso* (*Perilla frutescens*), eggplant, pumpkin, tomato, beans, *hakusai* (Chinese cabbage) and *nigagori* (Okinawan bitter melon). One man recalled being forced to eat *nigagori* as a child, and several people said they had to grow accustomed to the taste, which they did because they believed it was healthy. One informant said salad was beneficial, but other said vegetables were good for health, but not raw. One woman exclaimed, “Vegetables are better to eat when you get older. Young people eat only meat!” Some informants did not list specific vegetables, but named dishes that contained many vegetables, such as *miso* soup, *nishime* (vegetable stew), *o-zoni* (vegetable soup with rice dumplings), *kimpira* (burdock and carrots seasoned with sesame seeds and chili peppers).

Several respondents emphasized growing one’s own vegetables. Whatever is “ripe from the farm is good for health,” said one woman, who had a cooking license and had operated an *enkai* (Japanese style dinner party) and wedding food shop. She gathers vegetables from her garden every day.

### *Wild Vegetables*

Another conversation arose unexpectedly with an individual who, at 55 and English speaking, was more of a cultural informant than a subject of my research. He told me that edible wild plants cause stomach cancer because of a substance called *aku* (harshness) found in many wild plants and which must be leached from the plant before

consumption. These plants are *fuki* (butterbur), *tsuwa*, *udo*, *tsukushi* (horsetail), *zenmai* (royal fern), *warabi* (bracken), *takenoko* (bamboo shoots). *Gōbo* (*Arctium lappa*), as well, is considered to be a wild plant as well as a commonly eaten domestic vegetable.

Despite being “wild”, apparently these plants can be purchased anywhere in Japan, including urban areas, so there is no geographical cluster or predominance of cases of stomach cancer anywhere. This informant said that now people know about *aku*, as the research started emerging about 20 years ago. Recently, he said, as a result of people avoiding these plants, stomach cancer has declined in Japan. However, lung cancer is going up, as well as breast, colon, and uterine cancers. People went from consuming wild plants to meat, he said. In the past, he said, people would eat dried wild vegetables every day, and it was good because of the fiber. The most common daily one is *takenoko* (bamboo shoots), which are still eaten frequently. Tanoura’s physician also talked about these wild vegetables, describing how in the spring there is an increase in the number of patients who come to the hospital with stomach aches because they ate too many wild plants, and cannot digest them. Apparently, this is common knowledge, although other recognized causes of stomach cancer, both my cultural informant and the physician agreed, are stress and too much food.

Once I learned about the wild vegetables, about halfway through the week of interviews, I asked some of my informants at the Hachimansō about them. One responded that she eats wild vegetables a little bit, but is aware of the *aku*. Still, she has eaten them since she was small, from her mother and father. One 80-year old man came up to me after our interview and said that they have taken the *aku* out of the mountain

vegetables, but there are still high rates of stomach cancer, and wondered why this was the case.

### Fish

Fish, a staple of the traditional Japanese diet, was frequently mentioned as beneficial for health when aging. Often the emphasis on fish was coupled with an admonition against meat. One 71-year old male informant stated that diabetes is increasing because of beef consumption, so that people should eat *aoi* (blue) fish instead because of the DHA (docohexaenoic acid), an assertion corroborated by others. It also is believed to prevent Alzheimer's disease and the Japanese *boke*. He specifically mentioned *kikInago*, describing it as the "child of the sardine" and famous in Ashikita, as being very good for health. Other informants said that they stopped eating meat at around age 70, or only eat meat twice a year. Some listed fish as among the top three foods for health, along with noodles such as *udon* or *somen*, certain vegetables, or *o-bento*.

### Eat Less

Several informants said that one should eat less as one gets older and that this was important for health. One said he learned from his doctor that breakfast should be 40% of the day's calories, lunch 20%, and dinner 40%, but did not state that he eats less than he did before. One 91-year old woman said one should eat half as much as when one was younger.

### Soft foods

Soft foods were mentioned as good for digestion and health. The lunches served at Hachimansō, where I shared lunch with the patrons, were indeed soft.

## Therapeutic Plants

One informant in Tanoura said that there were four main plants that are essential for health: *yomogi* (*Artemisia princeps*), *dokudami* (*Houttuynia cordata*), *aroe* (*Aloe spp.*) and *senburi* (*Swertia japonica*). He and his wife believe *yomogi* is good for a weak stomach and drink it as a tea every day, as well as may eat it boiled fresh and put into rice. “It excites the appetite,” he told me. They also drink *dokudami* tea every day, which is “good for digestion and cures scabs,” as well as drink aloe as it is also good for digestion. They often drink a decoction of corn silk mixed with *dokudami*, as cornsilk is good for kidney disease and is a diuretic. *Senburi*, because it is bitter, it is good for the stomach. In addition to these four main plants, he and his wife also drink a powdered tea of *tsukushi* (field horsetail) and *gennoshyoko* (crane’s bill), but was concerned about the overharvesting of the latter. All of these herbs are taken as decoctions.

One informant grows *dokudami* and drinks its tea for her blood pressure. She also drinks an herbal tea (*sōhabucha*) of mixed herbs (not specified) and *dokudami* every day instead of green tea as a medicine for internal organs.

Surprisingly fewer people than expected explicitly mentioned green tea as good for health when aging since Japanese usually drink green tea at least once every day, often more frequently, and there is an abundant literature on the longevity promoting effects of the beverage. The Hachimansō visitors are served green tea twice during the day at the Center, which often entails more than one teacupful. Most likely, they drink it at home with breakfast and dinner, as well.



### Fermented and Pickled Foods

Nearly everyone mentioned at least one fermented food as important for health when aging. All of these fermented or pickled foods are notable hallmarks of Japanese traditional cuisine, from *miso* soup (fermented soybean soup) and *nattō* (fermented whole soybeans) to *umeboshi* (pickled plums), *sake* (rice wine), *shōchū* (distilled potato/rice liquor) and green tea. Many informants emphasized that they ate one or more of these foods every day, such as one woman who eats *umeboshi* every day for her blood and internal organs.

### Longevity Limiting Foods and Behaviors

Meat was the most frequent, unprompted mention of a longevity limiting food. One woman no longer eats meat because of her cholesterol, and another because of the hormones, but said that chicken is acceptable. Fried foods were mentioned as being not only undesirable for health when one ages, but as not tasty as well. One woman flatly stated that she “hates” fried foods. Some avoid sweets out of concern for their blood sugar and potential for diabetes, but will eat sweets at festival times. At around age 70, an 80-year old woman began to be careful of diabetes. Another woman said she does not eat salt because of high blood pressure, but she eats anything, although fish is better.<sup>11</sup> People mentioned coffee as something to avoid when getting older, and one individual said she drank coffee every day when she was young, but no longer.

### Eating in General

One informant gave me an example of a typical lunch: potato, *sōmen* (thin wheat noodles in ice water eaten in summer), many vegetables with vinegar, bread, and a small *onigiri* (rice ball) with *miso*. At 3:00 PM, he and his wife drink a glass of milk. In the

evening, they have fish, usually cooked, vegetable pickles, and fresh vegetables. He did not mention rice, but it is safe to assume that they also eat rice with this meal.<sup>13</sup> Another woman offered an example of her typical day of meals: breakfast, *miso* soup with *daikon* (white radish) and *tofu* (bean curd), lunch, *sōmen*, dinner, vegetables. Other foods preferred by respondents were bananas, *manju* (dumplings with salty vegetables or sweet red bean paste inside), *mochiko dango* (a traditional Japanese sweet made from pounded glutinous rice), and milk. One woman drinks “AO,” an energy drink every day.

### Summary

Elderly Japanese are aware of healthy foods and behaviors for longevity, but do not think about their health in terms of specific diseases and treatments. One should eat what is “traditional” and maintain variety in the diet. Many said that they like everything, and then listed foods they especially liked. Vegetables are emphasized above all other foods as essential to health and longevity, while fish is also considered to be integral to health, and appropriate for aging. *Nigagori*, *umeboshi*, *miso*, and *nattō* are some of the foods considered most important for health, and are also traditional Japanese foods. A few informants supplement their diets with medicinal plants, particularly *dokudami*.

Diagnoses and treatments of disease are left to their physician, who practices predominantly biomedicine. Many said they had high blood pressure and sore knees and backs. Lifestyle is as important for health as diet, many suggested, and emphasized rests, early rising in the morning, and exercise as part of their daily routine for health. Maintaining social contacts and activities is important for health and for preventing the feared brain disease, *boke*.

One informant gave traditional culture, such as *wabi-sabi*, as an explanation for health beliefs and behaviors. However, most informants left the role of traditional culture implicit when responding to questions about health and longevity.

## **Chapter 8: Discussion**

Elderly Japanese choose foods and behaviors that will enhance their longevity. These foods and behaviors are also central in traditional Japanese culture. This section analyzes dietary patterns from a biocultural perspective, illustrating both the role of these foods in creating and sustaining cultural and national identity as well as the biological efficacy of foods known for enhancing longevity. The demonstrated biological effects of these foods reinforce their role in Japanese traditional diet, while what is regarded as traditional is often researched the most. However, the relationship between biology and culture in this case is not as straightforward as expected. Okinawan longevity and diet and Okinawans' marginalized status in Japan creates an incongruity in the discourse about diet, longevity, and Japanese identity. Traditional ideas about balance and food as medicine have faced the introduction of biomedical science over the last century, transforming local notions of the body and health. However, Japanese reconcile these incongruities by syncretizing foods or concepts from elsewhere with the traditional worldview, thus maintaining a sense of traditional culture and identity as Japanese, while at the same time benefiting from the demonstrated efficacy of Okinawan foods or biomedical pharmaceuticals.

I analyze a number of the foods listed by informants as good for longevity, including the introduced *nigagori* from Okinawa. All of these foods have been shown to have biological effects that enhance longevity by mitigating the effects of age-associated dysfunction. Further, some of the lifestyle choices of elderly Japanese are also shown bioscientifically to be beneficial for health. However, elderly Japanese do not engage in these behaviors or consume these foods as much for their specific effects as much as to

maintain what they call *baransu*, which may refer either or both to traditional notions of balance or to the more recently introduced biomedical concept of balance, such as a balanced diet. The objective is to maintain balance rather than to treat specific disorders, a task they leave to their physician and biomedical pharmaceuticals.

### Dietary Preferences and Cultural/National Identity

Japan is often considered to be a homogenous society, ethnically, culturally, and in terms of its governmental policies. However social scientists argue that Japan, like any society, has contested meanings and other diversity behind its façade of uniformity. In any case, national consensus is important to forming and maintaining the sense of “Japaneseness” that gives Japanese a sense of identity and uniqueness (Lock 2000). Food is often argued to be a fundamental aspect of creating and maintaining a sense of identity as a culture. This clearly applies to Japan.

Elderly people in Tanoura tend to prefer a more traditional Japanese diet. Moreover, they believe that certain features of this diet are particularly beneficial for health and longevity. Consuming the traditional foods of one’s culture is a way to perform one’s participation in that culture. Further, common features of a diet shared among members of a population may influence the biology (e.g., longevity) of that population in some consistent way, reinforcing their observations of their community’s biological patterns. On the other hand, a population may engage in certain dietary practices that they believe have health effects, but which may be shown biologically not to have these effects, even as they are shaping the biology of their population in other ways through these practices. Thus, a discussion of the biological benefits of foods for longevity reveals the biocultural implications of the interactions among tradition, identity,

and biologically beneficial foods. The difficult question to answer is whether these foods are traditional because they are healthy (and have been known to be so for a long time) or whether they are believed to be healthy because they are traditional.

The foods that are most traditional in Japan are the ones believed to be most appropriate for maintaining health as one ages. The healthful features of the traditional Japanese diet are well-publicized, and for a time, even to the present, Japanese food has been heralded as the world's most healthy. Japanese are not oblivious to this press, nor to the patterns of longevity in their communities. People who knew the work I was doing in Tanoura brought me photocopies of newspapers articles on the subject from past years. Longevity becomes associated with "Japaneseness" and the cultural symbolism of food is then transferred to a therapeutic modality, as it not only maintains one's Japaneseness, but also maintains one's health and longevity, which is also a major modern conceptualization of what it is to be Japanese. Thus, the identity cultivated through the consumption of foods believed to be both traditional and longevity-enhancing means that the biology of longevity cannot be separated from the Japanese cultural identity produced by the shared consumption of a traditional Japanese diet. The consumption of foods considered to be traditionally Japanese allows people to participate in the "imagined community" (Anderson 1983) of Japanese culture and society. That these foods are also believed and shown to enhance longevity means that living a long life is not only ideal for the symbolic personal meanings of virtue and filial piety, but is also a symbol of national and cultural significance.

Much of the personal and national identity associated with food recently involves a revival of tradition and Japaneseness, as exemplified in the *furosato undō* (return to the

countryside) movement and the organic, Japanese grown natural foods movement (Ashkenazi and Jacob 2000). As a result of Japan's rapid modernization and rural to urban migration, Japan has a profound sense of nostalgia associated with its own history and tradition. It is evident in television programs such as *Soko ga shiritai* (I Want to Know About That Place), a show in which a personable host takes viewers to different locations in Japan where the best rice, organic eggs for a Tokyo-famous *donguri* (rice with chicken and egg topping) restaurant, or *tatami* mat grass are grown. Karaoke videos for traditional *enka* songs often evoke nostalgia for nature, the past, and key features of the Japanese landscape, such as seaside villages or autumnal countryside. These feelings of nostalgia become embodied in the rural landscape and the individuals who live there. For the people who live in rural Japan, who embody these meanings, the nostalgia may not seem as profound, for certainly a large proportion of the younger generation are fleeing to the cities to escape the realities of the demanding physical and economic challenges of rural life.

The traditional or what people regard as traditional foods of the Japanese diet represent not only ideal foods to achieve longevity, indicating the virtues of piety and moderation, but also represent the essence of Japaneseness. The act of achieving longevity is imbued with a moral weight, and if this longevity is achieved through the consumption of traditional foods, then the moral value, even superiority, of traditional Japanese diet, and thus both Japanese culture and nationhood is supported. One informant said that anything traditional is good for health when one ages, and this comment evokes both Ekiken's advice to eat a variety of foods, and the emphasis on Japanese tradition as the morally preferred means to health and longevity. The belief that traditional foods are

superior for the health and longevity associated with Japanese people also supports Allison's (1991) observations that food is appropriated as a sign of the culture. What is traditional not only facilitates longevity, a physiological as well as ideological aspiration, but represents it. To consume a traditional diet while eschewing foreign foods demonstrates, in the case of Japan, one's commitment to one's culture, traditions, and nation.

Rice is probably the most significant food that represents "Japaneseness" to Japanese. Indeed, rice has stood as a nationalistic symbol of Japan since the Early Modern period, and as a symbol of the purity of the Japanese people (Ohnuki-Tierney 1993). However, few informants emphasized rice as an integral food for health when aging. I believe the reason for this is less that it is not considered important, but that it is taken for granted and assumed to be consumed with meals. It can be assumed that rice is the predominant carbohydrate source in this study population (Ogawa et al. 2002), although bread has grown in popularity in Japan.<sup>13</sup>

While other traditional foods may not have as much evocative power as rice, their associations with Japanese tradition are compelling enough to operate as symbols of Japanese identity. For example, within Japan different kinds of *miso* are associated with different regions of the country, but the fact that *miso* as a food category is shared by Japanese makes it a metaphor for Japaneseness. Other examples of such national food traditions, such as *sencha* (Japanese green tea) and *sushi*, also work to produce and reproduce Japaneseness, and are familiar markers of Japanese cuisine and culture around the world. In Japan, the seasonality of foods is another factor in shared traditions, so that the consumption of *oden* (meat, tofu, and root vegetables simmered in broth) in winter,



*sōmen* (thin wheat noodles served in ice water) in summer, or *kaki* (persimmon) in fall are all ways of participating in this national and cultural “imagined community” (Anderson 1983). When Japanese consume a food that is shared nationally and understood to be a cultural food, they participate in what might be considered an “imagined” commensality, reinforcing their own Japaneseness and strengthening the power of that particular food to carry these meanings.

### Reconciling the Okinawa Case

However, no society is entirely homogenous, nor do traditions and histories tell the whole story. The Japanese traditional diet may be healthy, but it may not be the *best* means to longevity. In fact, if the Okinawans have the highest longevity in Japan, it is *their* traditional diet that might explain Japanese longevity. Nutritionists have suggested that the pre-modern Japanese diet was deficient in protein, oils and fats, while the Ryukyu (the pre-annexation name for the Okinawan Islands) Islanders ingested much animal protein from pigs and fish, as well as vegetable protein in the form of tofu, and fat from lard (Ishige 2001). Other factors contributing to Okinawan people’s longevity include high consumption of sweet potatoes, seaweed (especially kelp), and locally produced brown sugar. My informants mentioned two traditionally Okinawan foods as beneficial for health and longevity: *nigagori* (*Momordica charantia*) and *karaimo* (*Ipomoea batata*). It is uncertain whether this food is familiar to all Japanese, or only to those rural farmers living in the southern areas of Japan (closest to Okinawa), although I learned later that *nigagori* is not very popular with Japanese from Tokyo and other areas north of Kyūshū. Several informants said that they do not like the taste of it, but eat it

because it is healthy, which suggests an awareness of Okinawan health and diet, or at least, the health benefits of this particular vegetable.

Although the Okinawans have been ostracized and stigmatized as not being “truly” Japanese, many facets of their diet have been co-opted, such as *karaimo* and *yakIniku* (grilled pork). The case of Okinawa reveals discrepancies in the discourse surrounding longevity, Japaneseness, and diet. Okinawans live the longest, but do not eat a truly traditional Japanese diet, nor are Okinawans included in cultural conceptions of what constitutes Japanese, yet Japan claims the status of having the highest longevity in the world, a position they can only attain by *IncludIng* Okinawans in the calculation. Further, it is *women’s* life expectancy in Okinawa that has the greatest disparity with Japanese women. Okinawan women’s life expectancy of 84.9 years gives them a three-year advantage over the rest of Japanese women, while Okinawan men’s life expectancy of 76.8 gives them an advantage of only months over other Japanese men (Cockerham et al. 2000). (Okinawan women live an average of 8 ½ years longer than Okinawan and Japanese men.) Further complicating the discourse about tradition, identity, and longevity is the role played by food in creating and sustaining cultural identity. Diet is considered to be a major factor in longevity, but the longevous Okinawans do not eat a truly traditional Japanese diet. One way non-Okinawan Japanese may reconcile these contradictions is by finding single components of the Okinawan diet, such as *nigagori*, that might explain the difference in longevity, much as North Americans might attribute the consumption of green tea in Japan to lower rates of certain cancers or the daily consumption of tofu to a lower incidence of menopausal hot flashes in Japanese women compared to North American (Lock 1993).

Although Japan is portrayed as a mostly homogenous society ethnically, economically and culturally, there are differences, which may explain differences in longevity (Cockerham et al. 2000). The case of Okinawa is a compelling and contradictory example of these differences. Having the highest rates of poverty and a marginalized status usually correlates with lower life expectancy rates, yet Okinawa has the highest life expectancy in the world. Japan as a nation enjoys the status of having the world's highest longevity rates because of the inclusion of a marginalized population living in a climate, consuming a diet, and sharing a cultural history markedly different from the rest of Japan. Reconciling this contradiction as well as pursuing the longevity so morally and culturally valued leads to the adoption of foods that are associated with Okinawan longevity.

#### Consuming Longevity

Many of the foods informants listed as ideal for health and longevity have been shown to biologically substantiate their reputation. The following sections illustrate the biological and cultural interrelationship of some of these foods.

##### *Nigagori (Momordica charantia)*

A diet rich in plant foods is associated with a decreased risk of chronic disease (Balentine and Paetau-Robinson 2000). Vegetables are well-known to be healthy for people of any age, and were the first thing many informants listed when thinking of good foods for healthy aging. Of these, informants mentioned the vegetable called *nigagori* in Kumamoto dialect (it is known elsewhere in Japan as *goya* [Okinawa] or *nigauri*), or Okinawan bitter melon, as particularly healthful. *Nigagori* is both quite bitter (a food property considered in many cultures to be a marker of medicinal action [Johns 1990])

and from Okinawa. It is a traditional food and medicinal plant of Southeast Asia, and one of the medicinal plants used in Ayurvedic medicine (Scartezzini and Speroni 2000). It has been used traditionally to treat disorders and symptoms analogous to those of diabetes. In recent years, *nigagori* has received increasing attention for its pharmacological activities. Its extract has the effect of lowering blood glucose in diabetic mice (Miura et al. 2001) and has been studied pharmacologically as a source of diabetes therapy (Grover et al. 2002; Rathi et al. 2002). *Nigagori* has also been studied for its effects in inhibiting tumorigenesis (Nagasawa et al. 2002), decreasing blood and liver lipids (Noguchi et al. 2001), and as a treatment against HIV (Wang and Ng 2001). Further, *nigagori* has been shown to have significant antioxidant effects (Scartezzini and Speroni 2000).

Unlike most of the other foods and plants listed by informants as therapeutic for aging, *nigagori* may be a more recent introduction to the general Japanese diet. However, Kyūshū, as the island closest to Okinawa as well as the area in closest contact with foreign trade (e.g., Portuguese, Dutch) in past centuries (Ishige 2001), is culturally and dietarily different from the more northern regions of Japan where *nigagori* is not as available nor enjoyed as it is in Kumamoto, where it is sold in any supermarket. Japanese living in Kumamoto and other Kyūshū Prefectures may have been consuming *nigagori* and other Okinawan introductions for much longer than the rest of Japan. One woman showed me the *nigagori* plant growing in her garden, from which she harvested a vegetable every few days to prepare for her family.

The popularity of *nigagori* in Tanoura has several implications. It may be that long-standing contact between Kyūshū and Okinawa has influenced southern Kyūshū's cuisine when the rest of Japan remained less influenced. Thus, Kyūshū inhabitants

essentially indigenized foods from Okinawa to become traditional or even regional specialties (e.g., Kagoshima Prefecture's famous Satsuma sweet potatoes), which may contribute to the Kyūshū population's reputation for longevity. On the other hand, it may be an example of a more deliberate attempt to reconcile the discrepancy between beliefs about the superiority of the Japanese traditional diet with observations of Okinawan's higher rates of longevity, as described in Chapter 4. Japanese in Kyūshū may realize that *nigagori* has many health benefits and a possible contribution to Okinawan longevity. Parts of Okinawan cuisine, such as *nigagori*, are then incorporated into the Japanese diet to acquire their health benefits. Making *nigagori* a part of the everyday diet is the beginning of indigenizing the vegetable, and a way of sustaining identification with the cultural meanings of the traditional Japanese diet while at the same time, consuming a "semi-Japanese" food known to have biologically beneficial phytochemistry. One can participate in the performance of Japaneseness through the consumption of a shared food culture, but also enhance the possibility of achieving longevity by consuming an Okinawan traditional food and ultimately embodying a trait (i.e., longevity) that represents Japaneseness.

*Umeboshi (Prunus mume and Perilla frutescens)*

Informants often listed *umeboshi* as both a specific medicinal food and a food ideal for healthy aging and longevity. One woman said she eats *umeboshi* every day for her blood and internal organs. Folk knowledge of *umeboshi* says that it cleans the blood, prevents food poisoning, balances acidity, controls sugar cravings, supplies the body with salt, and quenches thirst. It has been used medicinally in China since ancient times, and in ancient Japan it was believed to prevent infection during a plague (Ishige 2001). During

World War II, it was used as a propaganda and morale food. People were encouraged to eat boxed lunches of rectangular-shaped white rice with a red *umeboshi* in the center, creating an image that emulated the Japanese flag.

Both *ume* (*Prunus mume*) and *shiso* have been shown to have pharmacological action. Studies of *Prunus mume* have isolated an active compound, called mumeferul, which markedly improves blood flow in all subjects (Chuda et al. 1999), giving bioscientific support for the folk belief in the ability of *umeboshi* to clean and smooth the blood. *Shiso* leaves are used when pickling *ume* with salt to make *umeboshi*, and are what give *umeboshi* its characteristic bright red color. *Shiso* has been shown to inhibit inflammation, allergic response, and tumor necrosis factor-alpha production (Ueda et al. 2002). Further, *shiso* has an antidepressant chemical action attributed to rosmarinic acid, and has been found in some traditional Asian herbal medicines that are primarily used to treat affective disorders such as depression and anxiety (Luo et al. 2000; Takeda et al. 2002). Other studies have shown that the leaves of *shiso* may act as an immunopotentiator by increasing the activity of certain macrophages (Kwon et al. 2002).

#### *Fermented Foods*

A number of foods mentioned as ideal for health and longevity are often traditional fermented Japanese foods, such as *miso* (fermented soybean paste), *nattō* (fermented whole soybeans), *umeboshi* (plums pickled with salt and *Perilla fructens* leaves) or *sencha* (Japanese green tea). Fermented food products are well-known to have many healthful benefits, such as diminishing toxicity in raw food products and increasing nutrient bioavailability, as well as containing B-vitamins and antioxidants (Etkin and

Ross 2000). Fermented foods have antimicrobial action, have been shown to have anticancer activity, and in some cases, contain bacteria beneficial to human digestion.

*Nattō* in particular has been studied for its effects on bone mineral density in premenopausal women, where it was found effective in maintaining bone “stiffness” (Katsuyama et al. 2002) . It has also been shown to inhibit oxidation of low-density lipoprotein (LDL), and lowers plasma triglyceride and total cholesterol levels (Iwai et al. 2002a). Further, *nattō*'s oxygen radical scavenging has already been well established, and it is this antioxidant capacity that contributes to inhibiting LDL oxidation (Iwai et al. 2002b). Osteoporosis, high cholesterol, and the effects of free radicals on disease pathogenesis are all associated with aging. The evidence of the inhibitory effect of *nattō* on these age-associated processes suggests that the consumption of *nattō* can contribute to health and longevity.

### *Fish*

The consumption of fish in Japan is another instance of tradition synthesizing with biology for longevity. Informants described fish as far more beneficial than meat, and always it mentioned in counterpoint to meat. Some informants made a point of the fact that they used to eat meat, but have since given it up for health as they age. Fish has been shown to be healthy biologically not only for its high protein levels, but for the high levels of DHA (docosahexaenoic acid), especially in *aoi* fish (“blue” fish) such as mackerel. DHA helps maintain nervous system function and is believed to be protective against Alzheimer's and other dementia-related disease of aging (Hashimoto et al. 2002; Gamoh 2001). The difference between 80 gram and 120 gram servings is argued to be significant in lowering the risk of Alzheimer's disease.<sup>14</sup> Further, raw fish is better

because the DHA-rich oils will not drip off during cooking. This means that the people in the world who eat raw fish have the best advantage, and the Japanese are one of the few populations that consume raw fish on a regular basis.

*Green Tea (Camellia sinensis)*

Green tea is known to be biologically protective against cancer and other age-associated illnesses (Balentine and Paetau-Robinson 2000; Sueoka et al. 2001). Researchers attribute these protective benefits to the high antioxidant content of green tea. Tea flavonoids scavenge reactive oxygen species and free radicals in several ways, including delocalizing electrons, formation of intramolecular hydrogen bonds, and rearrangement of their molecular structure. Tea flavonoids also chelate free copper and iron, which prevents oxidative reactions catalyzed by these metals. The decrease in free radicals associated with a reduced calorie diet (Roth et al. 2001), which is a result of reducing the production of free radicals and reactive oxygen species, seems also to be produced by high consumption of green tea, which works by mitigating the oxidative stresses resulting from metabolism. Green tea has also been shown to reduce the risk of certain cancers, also because of antioxidants effects (Kinjo et al. 2002). Japanese traditionally drink green tea several times a day, which might explain in part Japan's high rates of the longevity.

Visitors at the Hachimansō drink green tea there twice a day, and probably at home as well, but only a few mentioned it as beneficial or medicinal for aging and longevity. Like rice, green tea may be such an ubiquitous part of daily life that people do not immediately reflect on its consumption as a health behavior. Indeed, most Japanese may consider green tea to be a cultural practice first. Green tea carries powerful cultural



meanings, epitomized in the tea ceremony, which embodies the Japanese values of harmony, hospitality, appreciation of nature, and simple refinement. Japanese tea ceremony is essentially the performance of *wabi-sabi*, the cultural value of simplicity and elegance that one informant said is the basis for his health beliefs and behaviors. The notion of *wabi-sabi* developed with tea culture in the 15<sup>th</sup> century. *Wabi-cha* was intended to bring a spiritual aesthetic to the consumption of tea, which had evolved from a medicinal beverage to a drink enjoyed for its taste (Ishige 2001). The *samurai* drank ritually prepared tea as a way to cultivate their minds and spirits in the philosophy of Zen Buddhism. This sense of refinement and simplicity came to imbue traditional Japanese values. The daily act of drinking green tea is yet another way for Japanese to participate in a real and imagined commensality, since practically the entire country stops their activities for a tea break at 10:00 AM and 3:00 PM to drink a beverage that has a cultural history extending to the 13<sup>th</sup> century (Ishige 2001).

As these example demonstrate, eating traditional Japanese fermented foods such as *nattō* and *miso* allows one to consume the tradition and meanings of being Japanese while at the same time eating the biologically best foods for health and longevity.

#### *Consuming Less*

Some informants stated that eating less food, as much as half as much as when they were young, is better for health. Since many people in Japan receive much health information from nationally broadcasted, biomedically-based health programs, it is not clear whether this knowledge is “traditional” or a repetition of received knowledge. In any case, the belief in eating less food parallels biological research on caloric restriction

that shows a significant increase in longevity in laboratory mammals that were fed a calorically-restricted diet (Roth et al. 2001).

### Symptoms and Treatment of Aging

The symptoms of aging that informants described are similar to the symptoms described by elderly North Americans, although North Americans complain more frequently of these symptoms (Haug et al. 1989). The symptoms that my informants listed were quite consistent between individuals and showed a somewhat narrow range of concern. The symptoms they listed also corroborated Lock's (1993) work on aging and menopause in the Kansai (Kyoto and Osaka) region in the late 1980s. Because most of my informants were women, it is difficult to examine gender differences in aging symptoms. Most of the women mentioned sore backs and knees, as well as high blood pressure, while the men described specific diseases, such as diabetes, cirrhosis of the liver, and high blood pressure. Moreover, many of the women walk bent at ninety-degree (or greater) angles to the ground, attributing their posture to the pain in their backs. Whether people treated these symptoms specifically was not clear, since the emphasis seemed to be on having a lifestyle that accommodated and minimized these symptoms.

All the diseases informants said were health problems that were part of aging have biomedical analogues or exist only as biomedical constructs. High blood pressure was the most common, but diabetes, "alcoholic liver disease," and myocardial infarction also were mentioned. This can be attributed in part to the biomedicalization of the Japanese health care system and the fact that health care provided by hospitals is inexpensive, especially for the elderly (Maeda 1993).

Haug et al. (1991) found that Japanese do not wish to know the details of their own health conditions as much as Americans do, a finding supported by this study. One woman said she takes medicine daily, but does not know what it is for. She guessed high blood pressure. The high degree of consensus (e.g., high blood pressure) among informants about the conditions for which they are taking medicine might also be because it is a simple disease category that may serve as a gloss for a number of other health conditions that these informants are not concerned to understand in more detail. However, it may also be because high blood pressure commonly increases with age, both in the U.S. and Japan.

Further, information about health and disease in Japan is ubiquitous. It is likely that there have been television programs, newspaper articles, and books written about the most common diseases experienced by the elderly so there are a number of ways elderly people learn about their own diagnoses, as well as other age-associated diseases they might expect to encounter at some point. This national information dissemination reinforces shared conceptions of health and disease and encourages national-level consensus about disease etiology, diagnosis, and treatment. Indeed, most of my informants supplemented their own knowledge and explanations of their illnesses and treatments they received from Tanoura's physician with television programs on the subject. Lock (1997) has suggested that national consensus is integral to Japanese national identity, and the concept of "cultural nationalism" (Yoshino 1992) coined to explain the Japanese self-identity as both culturally and nationally grounded. National television programs that disseminate health and other information allow Japanese to

participate in the national and cultural consensus on how to define, achieve, and maintain health as represent by television programming.

Lock (1980) suggests that traditional anatomical categories have conflated with introduced biomedical ones so that on the surface, Japanese (particularly elderly) discussions of organs and functions seem to be biomedicalized. It may be, however, that traditional conceptions of function and humoral relationships also exist. The lack of discussion about particular organs and their functioning and the ready descriptions of more general ideas about health suggested lingering traditional conceptions of the body and health. For example, one woman said she eats *umeboshi* (pickled plum) every day for the “internal organs and blood.” This implies that *umeboshi* has the tonic effect of balancing the body, rather than a specific effect on the function of any one organ or system.

Health and illness are merely the difference between balance and imbalance in traditional East Asian medical cosmology. That the elderly informants could describe many ways of maintaining the overall balance of the body through moderation in rest, eating, and exercise, rather than list specific prescriptions for health, suggests a conviction in the traditional notion of balance and health. Further, several informants mentioned eating “balanced” foods. However, informants used the word *baransu*, which is the Japanese pronunciation of the English word “balance.” When foreign words are used in this way, it suggests either the literal adoption of foreign concepts or the creation of uniquely Japanese concepts using the foreign word referents (which Japanese often believe is a foreign idea). The notion of *baransu* may be another example of biomedical

concepts overlaying traditional, as Lock (1980) suggests, but it will require further inquiry to understand the nuances of *baransu* for these informants.

### Food, Medicine, and *Baransu*

There is a significant literature on the overlap of food and medicine in many nonindustrial societies. Less attention has been devoted to this overlap in modernized and industrial societies. One reason may be the tendency toward a sharp dichotomy between foods and medicine in Western nations. Food and medicine occupy their own categorical domains, although the ethnic and cultural diversity in Western societies suggests that there are still food and medicine beliefs to be explored. Since the production of food and medicine are a step, or many, removed from the consumers, food and medicine have become commodities and perhaps subject to different analyses than those used to understand subsistence and/or agrarian societies. The conceptual categories used to organize and interact with foods and medicines adjust to accommodate the current means of production and distribution. Further, the history of biomedicine contributed to dichotomizing food and medicine, and most modernized countries have a strong biomedical influence. Japan is an exception from most other non-Western societies in its high level of modernization and industrialization, as well as greater lack of ethnic diversity and assimilation than the West, but has a non-Western cultural and intellectual history.

What remains, then, is an awkward vocabulary to express the conceptions of foods as medicines in modernized, non-Western societies, like Japan. Japan's 120-year history with biomedicine has established certain categories of diagnosis and treatment that are not a part of the conceptual foundations of Traditional Chinese Medicine-derived

*kampō*, which emphasizes diet as the first means to treating illness. This emphasis still remains despite the dominance of biomedicine. For example, most informants implied that the foods listed were good for prevention of illness, rather than treatment, since they were ideal for health and longevity.

However, whereas *kampō* traditionally used diet and herbal medicines to treat a diagnosed illness, most people now visit biomedical physicians for illness, reserving diet for preventative purposes as well as possibly for other nonbiomedical disorders, such as “imbalance.” Still, Japanese might visit a biomedical practitioner for the condition of being “cold” since this is viewed as a precursor to other illnesses (Ohnuki-Tierney 1984).

Informants at Hachimansō did not seem to be particularly concerned about specific diseases or disorders for which to take preventive action. The local physician did mention concern about senility and cancer, and had diet and lifestyle recommendations for his patients to deter these possibilities. One male informant, who had lived in Kumamoto City in his youth, where he graduated from college, also mentioned cancer as a concern and listed many foods he and his wife consumed for prevention. He even stated that if one does not take care with food, when one gets ill, it is too late. This man, however, also had had tuberculosis when he was a young man, which had delayed his education for two years. This experience may have primed him to be more health-conscious. Yet, while most of the Hachimansō patrons have lived in Tanoura most of their lives and are often not educated beyond the sixth grade, they still readily articulate what they believe to be healthy foods for longevity.

Lock (1980) and Sonoda (1988) found that the higher the education level, the more likely an individual is to use *kampō*. Both argued that *kampō* has become

increasingly popular in recent years, but in fact, my informants overtly rejected the idea of taking *kampō* medications. This might be attributed to the lower level of education of most of my informants (although several college-educated individuals, including the physician, also felt similarly, and were even more earnest about the dangers of *kampō*). Their aversion may also be related to the running news story during the summer of 2002 about the deaths of eight women and the severe illness of hundreds of others from taking an illegal Chinese medicine for weight loss.<sup>12</sup>

While *kampō* is not central to this study, it is important to note that its cosmological underpinnings are also the basis of folk Japanese health cosmology. Yet, while *kampō* is rejected, many rural Japanese adhere to the same health cosmology, which considers certain foods as therapeutic. This raises compelling questions about how modern health beliefs have infiltrated the countryside and to what degree supplanted traditional beliefs. Further of note is that several informants explicitly stated that Western medicine was superior to *kampō* because it acts quickly, thus not allowing damaging side effects to accumulate in the liver. However, these informants quickly remarked that the most important thing is to take care through diet and lifestyle before resorting to medicine.

#### Prevention and Health Maintenance

Informants regarded diet as the best means to health when aging because many foods *prevent* disease and disability. For example, nearly every informant's first response to the question of ideal foods for longevity was vegetables. Vegetables have been shown to have high concentrations of antioxidants, which have also been implicated in modulating oxidative stress of aging and age-associated diseases (Meydani and Meydani

2002). However, the preventive properties of the foods, behaviors, and dietary supplements informants listed were not elucidated in great detail, in part because the objective of healthful eating is to maintain balance rather than to prevent specific diseases. A balanced life and body prevent disease more than any specific behavior or food. The physician seemed more concerned about particular pathologies he hoped to help his patients avoid. Balance was the main concern of my informants, leaving the prevention and treatment of disease to the physician. To speak of prevention suggests an anticipation of certain pathologies, rather than emphasizing the maintenance of balance.

#### *Plant-based Dietary Supplements and Medications*

Several informants mentioned some plants or foods that are not typically part of the daily diet, and are considered herbal supplements in the United States. These plant products are especially added to the diet for their preventive or health maintenance functions. Few ate or consumed plants or foods for the express purpose of treating a specific illness, although certain foods were avoided to prevent exacerbating an illness or condition. One informant listed four plants he considered essential for health: *dokudami* (*Houttuynia cordata*), *aroe* (*Aloe* spp.), *yomogi* (*Artemisia princeps*), and *senburi* (*Swertia japonica*).

One informant drinks *dokudami* as a daily tea to help with digestion and to “cure scabs,” while another drinks a tea of home-grown *dokudami* for her blood pressure and internal organs. *Dokudami*, indigenous to East Asia, has a long history in East Asian medicine. Research on *dokudami* has shown anticancer activity (Kim et al. 2001) as well as inhibitory activity against certain viruses (Hayashi et al. 1995). *Dokudami* has also been shown to be a central nervous system suppressant as well as a diuretic



(Tsumura 1991). In *kampō*, *dokudami* is used to drain heat, relieve toxicity, and expel pus (Rister 1999). It is applied to sores, internal and external, that are associated with fever and pus, thus corroborating the assertion that it “cures scabs.” Further, *dokudami* has a diuretic effect caused by the chemical quercitrin. *Dokudami* can kill the bacteria that causes staph infections, pneumonia, and typhoid, as well as *E.coli*, by stimulating the action of white blood cells. Further research has shown that it slows stomach cancer development (Chang 1986), also a concern for Japanese. One informant drinks cornsilk and *dokudami* tea as he believes cornsilk is good for kidney disease and that both have diuretic action.

Aloe has been used in traditional East Asian medicine since the 4<sup>th</sup> century B.C. (Cole and Chen 1943) as a treatment for constipation, dizziness, red eyes, and irritability due to fever. Aloe bitters are used to kill parasites and to strengthen digestion (Rister 1999). Aloe is used in folk medicine as a purgative and a laxative, which has been supported by scientific research (Yagi et al. 1997). Its folk use as a topical salve for cuts, burns, or rashes has also been substantiated with bioscientific inquiry (Zhang and Tizard 1996). *Aloe vera* leaves have been shown to have antidiabetic properties (Okyar et al. 2001), as well as anticancer activity due to its effects on the immune system (Imanishi et al. 1981). Other research has shown that aloe juice can reduce the risk of lung cancer in smokers (Sakai 1991).

*Yomogi* is a culturally and medicinally important plant in Japan (Lock 1980) so it is likely that informants know what it is and how it is used, but may not use it themselves. It is also possible that in the short interview period that responses were not elicited in as great detail as possible. Scientific research on *Artemisia princeps* and *A. montana*, the

species of *Artemisia* used in Japan, is sparse, although research on other species show a number of pharmacological actions, which many cultures use medicinally to treat malaria (Etkin 1997; Tu 1999) and parasites (Tagboto and Townson 2001). *Artemisia* is used in *kampō* as a bitter, cooling, drying herb that promotes the flow of fluids from the body (Rister 1999). It is used to treat jaundice, as it is in traditional Chinese medicine (Fok 2001), gallbladder inflammation, hepatitis, skin diseases with itching and burning, and fever. *Artemisia princeps* and *A. montana* are used in Japan for moxa burning, the smoke of which has been shown to have significant cytotoxic activity against human oral tumor cell lines as well as free radical scavenging activities (Oda 2000; Hitosugi et al. 2001). Yomogin, a constituent isolated from *A. princeps*, has been shown to have inhibitive effects on the production of nitric oxide, which contribute to circulatory failure associated with septic shock, and thus may be used in the development of drugs to treat endotoxemia and inflammation associated with overproduction of nitric oxide (Ryu et al. 1998; Ryu et al. 2000).

*Senburi* is known as “thousand shakes” in Japanese, because it is said that even if it is boiled down one thousand times, the bitter taste will not go away, while in Chinese and Korean, the word for the plant can be translated as “dragon gallbladder herb” (Rister 1999). The bitter taste of the plant stimulates a reflex reaction that increases the production of saliva and gastric fluids (Rister 1999). Pharmacological research has shown that *senburi* does have the action of increasing the secretion of digestive fluids (Tsumura 1991), particularly bile. An informant said he uses *senburi* because its bitterness, stating that “bitter foods are good for the stomach.” However, *senburi* has also been shown to have liver protecting chemicals (Hase 1997) and been shown to be effective in treating

the retinal changes seen in diabetics (Zhang and Zhou 1989). It has been used with the steroid drug prednisone to more than double the chances of remission in lupus patients (Yuan and Feng 1989).

In traditional Japanese medicine, *senburi* is used as a bitter digestive. It drains “damp heat,” or infection, from the energy channels of the gallbladder, where it may cause sore throat, swollen eyes, jaundice, pain, swelling or dampness in genital area, or foul-smelling vaginal discharge with itching. It can also relieve liver syndromes that result in convulsions, fever, spasms, or pain in the sides.

The four plants (*aroe*, *senburi*, *dokudami*, and *yomogi*) this informant said were essential for health because of their perceived therapeutic action on digestion support. Lock’s (1983) description of the importance of the *hara* in Japanese traditional health cosmology. When the stomach is in balance, then the rest of the body will follow. Although this informant did not state the relationship between the health of the stomach and the rest of the body, he and his wife’s emphasis on taking care of digestion suggests their belief in this traditional ideology. These plants, in turn, have each been demonstrated to have pharmacological action on the stomach and digestion, illustrating the dialectic between biology and culture. While some of these plants may have been chosen because of reports of their biological efficacy, these plants have been used traditionally for centuries for the same purposes. Perhaps the scientific inquiry sought to determine if the folk and *kampō* uses were indeed efficacious, or rather, the producers and consumers of these plants have known for centuries what bioscientific research merely hoped to say in other words.

*Kakkontō: A kampō remedy*

The principal ingredient of the *kampō* medication Takeda-san said he might take as a cold remedy, *kakkontō*, is *kakkon*, or kudzu (*Pueraria lobata*). *Kakkontō* is a widely used *kampō* medicine in Japan, and it is notable that this is the one that Takeda-san *Kakkon* has been used traditionally in China and Japan to relax tight, painful muscles in the neck, shoulders, and back, and in Japan to treat breathing difficulties when perspiration is present (Tsumura 1991). The plant is anti-spasmodic and antipyretic, as well as increases blood flow to the brain and aorta. *Kakkontō*, the medicine, is indicated for the common cold, nose cold, inflammatory diseases, stiff shoulders, and neuralgia in the upper half of the body (Tsumura 1991) as well as nasal congestion, diarrhea, rashes, pain at the joints, prominent but hard veins, headache, and feverish and chilled feelings without sweating (Ohnuki-Tierney 1984). The medication, in addition to *kakkon* (*Radix Puerariae*), also has jujube fruit (*Fructus Zizyphi*), ephedra (*Herba Ephedrae*), licorice (*Radix Glycyrrizae*), cinnamon (*Cortex cInnamoni*), peony (*Radix Paeoniae*), and ginger (*kankyō*) in its formula. This medication can only be used by people with a strong constitution, even if someone with a weak constitution has the above symptoms (Ohnuki-Tierney 1984).

#### *Avoidance of Wild Vegetables*

One instance of a conflict between tradition and health is the consumption of “wild vegetables.” Some of the plants listed, such as *warabi* (*Pteridium aquilinum*), *tsuwa* (*Farfugim japonicum*), and *fuki* (*Petasites japonicus*) have indeed been shown to be carcinogenic (Siman et al. 2000; Hirono et al. 1983). One informant said that this has been known by Japanese for the last 20 years, and accounts for the decline in consumption, as well as the decline in stomach cancer. Yet, the elderly informants said

that they have eaten these plants since they were children and still continue to gather and consume them when available. The local physician believes that these plants are difficult for people to digest, which is why there is an increase in the spring of patients with stomach problems, since they eaten too many of these plants. Even today, one can see elderly women on the roadsides gathering large bags of these plants. *Warabi* is still used to make a popular pickle side dish, despite its implications in the development of cancer, so perhaps some traditions are more tenacious than others. Thus, there is a tension between these plants that are a traditional part of diet, especially in rural areas, and the evidence of adverse effects from their consumption, although this tension may support the evidence that traditional foods are believed to be most healthful.

On the other hand, several of these plants have been shown to have beneficial effects, such as *takenoko* (*Phyllostachys edulis*) and *gōbo* (*Arctium lappa*), in their anti-inflammatory and free radical scavenging effects (Lin et al. 1996; Hu et al. 2000; Kweon et al. 2001). It is these plants that seem to be more commonly eaten, as I often ate bamboo shoots and burdock root while in Japan, but never had the opportunity to try *fuki* or *tsuwa*. *Gobō* is also a part of the Japanese traditional medicine pharmacopoeia, used to treat obstruction in the throat, swellings, boils, tumors, and to relieve pain (Tsumura 1991).

### *Seasonality*

All of the vegetable foods listed by informants were in season and eaten daily at the time of the interviews. While this limits my results on one level because of my brief visit to Tanoura for research, it also reinforces the emphasis on seasonality in food consumption in rural, and even urban, Japan. Food and medicine overlap in the sense

that foods eaten out of season may have adverse effects on health while those eaten in season offset the stresses of the weather. The practice of eating seasonally stems not only back to a time when there was no choice but to eat fresh foods when they were in season, but also the East Asian cosmology that conceives of the universe in terms of balance of opposite properties (e.g., hot-cold, excess-deficiency). These properties interact on a cyclical continuum, and the means to achieve and maintain health is by keeping these properties in balance between one's physical/emotional/spiritual constitution and the environment, usually through diet and lifestyle. In summer, one must eat appropriately "cold" foods such as watermelon or raw tofu to counterbalance the heat and humidity of the season. Winter cold is counterbalanced by the "hot" qualities of long-simmered meats and root vegetables.

When food and medicine overlap, the therapeutic values of a certain food item then also become subsumed into a cultural ideology, and its benefits as a medicine or as a food cannot be separated from its importance in building cultural identity. This differs from societies like the United States, where formal notions of food and medicine are quite distinct, even though remnants of folk knowledge exist, such as chicken soup for the flu, steak for anemia, or honey and lemon for sore throats. Medicine takes on metaphorical qualities of science, technology, standardization, and "curing" because of its non-foodness, whereas food is less perceived as medicinal or even nourishing and therapeutic, in general, as much as a source of entertainment and pleasure. In Japan, the traditional concept of balance, adapted from traditional Chinese cosmology, means that almost any food could be considered medicinal. However, there are some that are both medicinal and imbued with strong traditional Japanese associations. Rice, again, carries

the most powerful connotations, because it is associated with sustenance and life, as well as Japanese-ness. *Umeboshi* also carries these cultural and medicinal connotations. *Nigagori* is considered “medicinal” for longevity. This study suggests that elderly Japanese take responsibility for their health by consuming traditional foods and maintaining a lifestyle as prescribed by traditional Japanese thought and morality, but that disease has been subsumed by biomedicine and is treated with pharmaceuticals.

### Conclusion

I began this project with the intention of learning how elderly Japanese conceive aging and how they treat its symptoms through diet and lifestyle. Local informants understood the study to be about longevity rather than aging, and the project transformed into a study of *chōju*—Japanese longevity. Japanese are aware of their reputation for longevity and its attribution to their traditional diet. Informants readily listed vegetables, fish, and a number of traditional foods such as *miso* soup, *nattō*, *umeboshi*, and green tea as the best foods to consume for healthy longevity. Research in Japan has shown that these and other traditional foods are biologically effective in enhancing health and longevity, reinforcing their value as good foods for aging in addition to their cultural and traditional value. As research results are disseminated nationally and globally and the scientific results become more firmly associated with a food, more research is conducted, further tightening the biocultural relationship between the biological efficacy of these foods and their role in the traditional Japanese diet. Many informants pointed out that they eschew nontraditional foods, such as coffee and meat, because they are particularly bad for longevity, although they may have consumed them when they were younger. While informants had clear ideas of healthy foods and lifestyle behaviors for optimum

longevity, most did not concern themselves with particular diseases. They visited the hospital frequently for health checks, and often take blood pressure or diabetes pharmaceuticals, but do little to treat these disorders specifically. Rather, they attempt to maintain balance in their lifestyle and diets as the best way to maintain health, leaving diagnosis and treatment of biomedical diseases to the physician. Informants said that “health is from eating” and “we must take care with food, because if we get sick, it is too late.” They believe that “traditional” foods are best, but that one must maintain variety in the diet as well.

Yet, although Japanese have the highest life expectancy in the world, this statistic is mostly because of Okinawan people’s, particularly women’s, longevity. Okinawans are marginalized, among the poorest people in the nation, and consume a diet that is not considered traditionally Japanese, although there are some influences. While many traditional Japanese foods listed by informants have been shown to have biological efficacy in mitigating age-associated diseases and enhancing longevity, Okinawan longevity statistics contradicts the belief that it is the *Japanese* traditional diet that leads to Japan’s longevity. Although removing Okinawans from the overall statistic leaves Japan with a very high life expectancy, it is not higher than Italy, Sweden, or France. It is only by including Okinawans in the calculation that allows Japanese to enjoy the status of longest-lived. In order to reconcile this contradiction that undermines the moral superiority and value of traditional Japanese foods and thus Japaneseness, Japanese consume certain foods from Okinawa that are most believed to contribute to longevity, such as *nigagori*. Indeed, the area of Japan where people consume Okinawan foods the most—Kyūshū—has the next highest rates of longevity in Japan after Okinawa. While



longevity can be attributed to many factors in addition to diet (e.g., social support, lifestyle, climate), these observations suggest that Okinawan diet has a significant role in enhancing longevity.

This study raises a number of questions that will benefit from further inquiry. While I learned how local perceptions of diet, lifestyle, and tradition relate to longevity, these understandings and practices are not as straightforward as they first appear. Cultural identity and nationalism are key to patterns of food consumption and notions of longevity, and further research on these symbolic meanings of traditional foods may clarify these relationships. As bioscientific research yields more information about the effects of traditional foods on health and longevity, further associations may be made between diet, longevity, and culture.

The number of elderly in the world will continue to increase, creating unprecedented opportunities and challenges for societies economically, politically, and culturally. Definitions of aging will fluctuate to reflect not only biological, but also social and cultural realities. While biologists struggle to find the clues to human aging and longevity, and medicine attempts to remedy age-associated diseases, anthropologists must investigate how aging and longevity are understood and experienced. The holistic approach of anthropology demands that the relationship between biology and culture is examined when trying to understand issues involving human embodied experience, such as disease, sexuality, menopause, or aging.

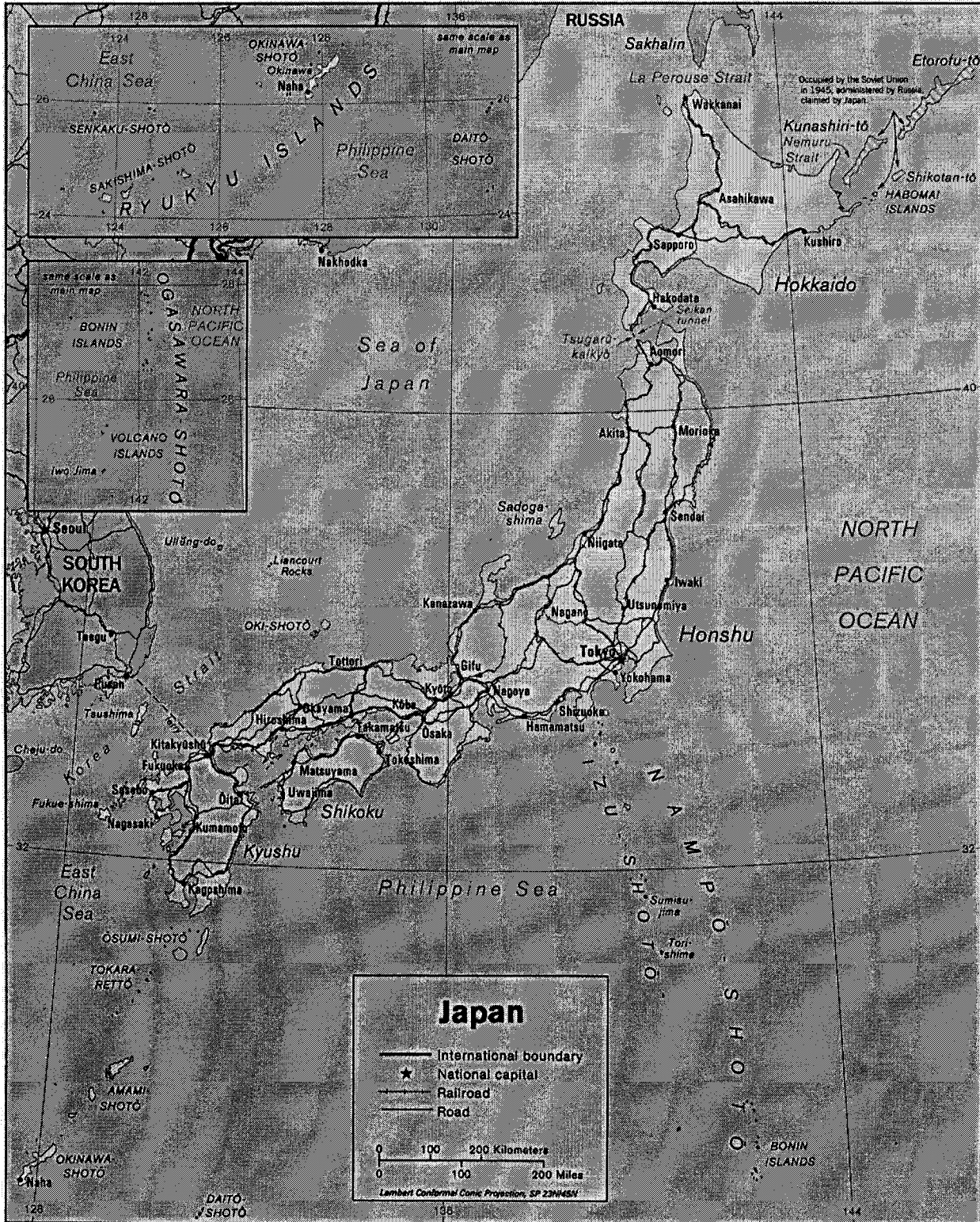
Cultural anthropology contributes ethnographic analyses of aging and longevity to the literature, showing the variable ways aging is constructed cross-culturally, while biological anthropology shows physical variation in aging between populations. Yet

although aging is a universal human phenomenon, it is not uniform. It is difficult to measure biologically, and there are many physical and cultural variables that influence the aging process and longevity, both within and between populations. Less has been done to integrate the ethnographic data with the biological, even though researchers recognize that both biology and culture need to be addressed. An appropriate language, such as Lock's (2001) "local biologies", emerges to encompass the nuances of the biocultural perspective attempt to transcend the Cartesian duality separating biology from culture. Biocultural approaches to aging would hopefully solve this division by focusing on this dialectic. Future research investigating aging must challenge its own categories and assumptions, both cultural and biological. The universality of aging renders it in some ways mundane, and all the more seductive to our preconceptions, at the risk of producing meanings more coherent to we anthropologists than relevant to the experience of those we seek to understand. This is always a danger in anthropology, a temptation that the reflexivity of the discipline attempts to alleviate. Yet, systematic theoretical approaches to an anthropology of aging are emerging. If anthropology endeavors to learn what it means to be human, then a biocultural approach to aging offers an opportunity to explore a broader range of variability in a universal human experience than ever before.

This thesis reviews the literature on the anthropology and biology of aging, self-medication, and Japan and outlines the advantages of a biocultural approach as a theoretical contribution to the anthropology of aging in rural Japan. By situating this study and the biocultural theoretical perspective in relation to the history of the anthropology of aging and current directions in biological and social science research on

aging, opportunities to embellish insights developed from past inquiry and to pursue future research will hopefully become manifest.

# Appendix A: Map of Japan



Map by the U.S. Central Intelligence Agency

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## **Appendix B**

**Table 1: Population of Tanoura: May 2002**

<b>Age</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
0-10	183	203	386
12-20	314	281	595
21-30	254	213	467
31-40	240	228	468
41-50	342	336	678
51-60	394	398	792
61-70	451	489	940
71-80	324	444	768
81-90	118	235	353
91-100	26	64	90
Over 100	3	1	4
<b>Total</b>	<b>2649</b>	<b>2892</b>	<b>5541</b>

*Source:* Tanoura Town Hall

### Appendix C

Table 2: Foods and Medicinal Plants Discussed by Study Participants

Japanese Name	Latin Name*	Family *	English Name	Parts Used	Fermented	Comments
Aroe	<i>Aloe</i> spp. L.	Asphodeliaceae	Aloe	Leaves		
Beeru	-	-	Beer	-	X	
Daikon	<i>Raphanus sativus</i> L.	Brassicaceae	Japanese radish	Root	X	Raw, boil-ed, pickled
Dokudami	<i>Houttuynia cordata</i> Thunb.	Saururaceae	Chameleon plant	Leaves		
Fuki	<i>Petasites japonicus</i> Miller	Asteraceae	Butterbur; sweet coltsfoot	Unknown		Wild vegetable
Gennoshyōko	<i>Geranium robertianum</i> L.	Geraniaceae	Cranesbill	Unknown		Medicinal supplement
Gohan	<i>Oryza sativus japonica</i> L.		Rice	Seeds		
Gōbo	<i>Arctium lappa</i> L.	Asteraceae	Burdock root	Root		
Gyūnyū	-		Cow's milk	Milk		
Hakusai	<i>Brassica rapa</i> L.	Brassicaceae	Chinese cabbage	Leaves		
Hōrensō	<i>Spinacia oleracea</i> L.	Chinopodiaceae	spinach	Leaves		
Imo	<i>Solanum tuberosum</i> L.	Solanaceae	Potato	Root		
Kabocha	<i>Cucurbita</i> spp. L.	Cucurbitaceae	Pumpkin; squash	Fruit		
Kaisō	-		Sea algae			
Kakkontō	<i>Pueraria montana</i> var. <i>lobata</i> Maesen & S. Almeida	Fabaciae	Kudzu	Root		<i>Kampō</i> medication
Karaimo	<i>Ipomoea batatas</i> L.	Convolvulaceae	Sweet potato	Root		
Katsuo/bonito	<i>Sarda</i> spp.		bonito	Flesh		
Kikinago	-	-	-	All		
Kimpira	<i>Arctium lappa</i> L., <i>Capsicum frutescens</i> L., <i>Sesamum orientale</i> L.	Asteraceae, Solanaceae, Pedaliaceae	Burdock root dish	Root, Fruit, Seeds		With chili pepper & sesame seeds
Kombu	<i>Laminaria</i> spp.		Kelp			

Table 2 (Continued)

Japanese Name	Latin Name*	Family *	English Name	Parts Used	Fermented	Comments
Kyūri	<i>Cucumis sativus</i> L.	Cucurbitaceae	Japanese cucumber	Fruit	X	Raw, pickled
Mame	<i>Phaseolus</i> spp. L., <i>Vigna</i> spp. Savi.	Fabaceae	Beans	Seeds		
Mikan	<i>Citrus</i> spp.		Mandarin orange	Fruit		
Miso	from <i>GlycIne max</i> L.	Fabaceae	soybean paste	Seeds	X	
Mugi	<i>Hordeum</i> spp. L.	Poaceae	Barley	Seeds		
Nasu	<i>Solanum melongena</i> L.	Solanaceae	eggplant	Fruit		
Nattō	from <i>GlycIne max</i> L.	Fabaceae	Fermented whole soybeans	Seeds	X	
Nigagori (goya)	<i>Momordica charantia</i> L.	Cucurbitaceae	Okinawan bitter melon	Fruit		
Ninniku	<i>Allium sativum</i> L.	Alliaceae	Garlic	Bulb		
O-cha (or sencha)	<i>Camellia sInensis</i> L.	Theaceae	green tea (Jpnse.)	Leaves	X	
Okura	<i>Abelmoschus esculentus</i> L.	Malvaceae	Okra	Fruit		
O-zoni	-	-	Vegetable soup with rice dumplings	-		
Pan	From <i>Triticum aestivum</i> L.	Poaceae	Bread	Seeds		
Ringo	<i>Malus</i> spp. Miller	Rosaceae	Apple	Fruit		
Sakana			Fish			
Sake	<i>Oryza sativus japonica</i> L.	Poaceae	Sake	Seeds	X	
Senburi	<i>Swertia japonica</i> L.	Gentianaceae	Japanese green gentian	Aerial parts		Medicinal supplement
Shiso	<i>Perilla frutescens</i> L.	Lamiaceae	beefsteak plant	Leaves		
Shōchū	<i>Oryza sativa</i> L., and/or <i>Ipomoea batatas</i> L.	Poaceae	Japanese whiskey	Seeds (rice), or roots (sweet potato)	X	
Shōyu	From <i>GlycIne max</i> L.	Poaceae	Soy sauce	Seeds	X	
Sōmen	From <i>Triticum aestivum</i> L.	Poaceae	Wheat noodles	Seeds		
Su	From <i>Oryza sativa japonica</i> L.	Poaceae	Rice vinegar	Seeds	X	
Tōfu	From <i>GlycIne max</i> L.	Fabaceae	Tofu	Seeds		

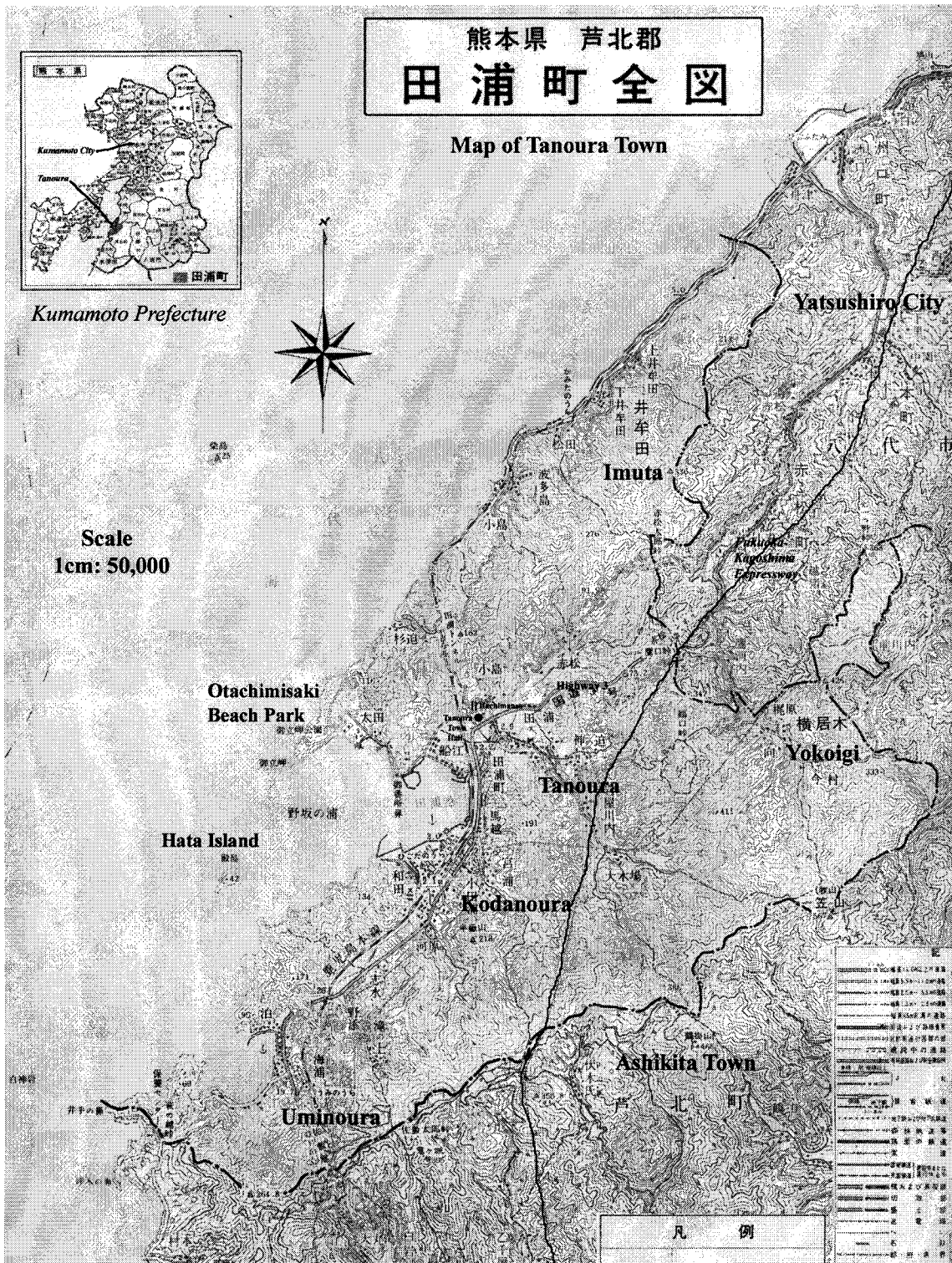
Table 2 (Continued)

Japanese Name	Latin Name*	Family *	English Name	Parts Used	Fermented	Comments
Tomato	<i>Lycopersicon esculentum</i> Miller	Solanaceae	Tomato	Fruit		
Takenoko	<i>Phyllostachys</i> spp. Siebold & Zucc.	Poaceae	Bamboo shoots	Shoots		Wild veg.
Tamanegi	<i>Allium cepa</i> L.	Alliaceae	Onion	Bulb		
Tokoroten	<i>Gelidium</i> spp.		Seaweed jelly			
Tomorokoshi no kinu	<i>Zea mays</i> L.	Poaceae	cornsilk	Follicle		Med.suppl.
Tsukushi	<i>Equisetum arvense</i> L.	Equisetaceae	Field horsetail	Unknown		Wild veg.; med.suppl.
Tsuwa	<i>Farfugium japonicum</i> Lindley	Asteraceae	Leopard Plant	Leaves		Wild vegetable
Udo	<i>Aralia cordata</i> Thunb.	Araliaceae	-	Leaves		Wild veg.
Umeboshi	<i>Prunus mume</i> Siebold & Zucc., <i>Perilla frutescens</i> L.	Roseaceae, Lamiaceae	Pickled plum	Fruit, Leaves	X	
Warabi	<i>Pteridium aquilinum</i> L.	Dennstaedtiaceae	Bracken	Aerial parts	X	Wild veg.
Yōguruto	-		Yogurt		X	
Yomogi	<i>Artemisia princeps</i> L.	Asteraceae	Mugwort	Aerial parts		
Zenmai	<i>Osmunda</i> spp. L.	Osmudaceae	Royal fern	Unknown		Wild veg.

\*Note: Latin names for plants are from Mabberley (1997).



**Appendix D: Map of Tanoura Town**



## **Appendix E**

### Consent Form Agreement to Participate in Study:

#### **Use of Foods and Traditional Remedies to Treat the Signs of Aging in Rural Japan**

Jessica Busch  
Primary Investigator  
808-392-2684

This research is being conducted as part of the requirement for Master's Degree in Anthropology at the University of Hawaii at Mānoa. The purpose of this research is to learn how people think about aging in Japan, the kinds of signs they associate with aging, and the kinds of medicines they use to treat these signs.

Participation in this project involves one interview with me lasting 15 minutes to one hour. I will ask how you define aging, what signs you associate with or experience with aging, and the kinds of foods or medicines you use for aging. Thank you for your interest and participation.

Your participation will help contribute to a body of knowledge about people's use of traditional medicines, including foods as medicine. This is a topic of increasing interest and importance both medically and culturally, and there is still much research that needs to be done to understand these patterns. Understanding how Japanese people think about aging will contribute to studies that try to understand the diversity of human experience with aging.

Participation in this research project is completely voluntary, and research data, including your name, will be confidential.\* I plan to interview five to ten people for this project, and data will be analyzed in aggregate.

If you have any questions regarding this project, please contact the researcher, **Jessica Busch, at 808-392-2684**. If you have any questions regarding your rights as a research participant, please contact the **UH Committee on Human Studies at (808) 956-5007**.

*Thank you very much!*

*O-kagesama de deshita!*

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\* Agencies with research oversight, such as the UH Committee on Human Studies, have the authority to review research data. All research records will be stored in a locked file in the primary investigator's office for the duration of the research project and will be destroyed upon completion of the project.

## Notes

1. Adapted from Naomichi Ishige. 2001. The History and Culture of Japanese Food. 2001. Kegan Paul: New York.
2. Japan's longevity is significantly boosted by Okinawan statistics. If Okinawa were removed from the data, Japan's longevity is not higher than France or Italy. See Chapter 4: Japan and Aging.
3. "Local biologies" refers to the way in which embodied experience is produced by the material body, which itself is contingent on evolutionary, environmental, and individual variables, and by social and self-representations of the body drawn from local categories of knowledge and experience.
4. Aging in Mangaldhi, West Bengal is defined in terms of "cooling" and "drying" (Lamb 2000). These processes are not only physical, but also social, emotional, and spiritual. Bengali people mark age by social role changes that come with the marriage of their children and birth of grandchildren rather than by chronological or functional measures. Gender distinctions in aging identify women as more "open" and "hot" until their postreproductive years, when their bodies are cooler and more self-contained. At this time, being more like men, they may participate in the more masculine practices and social identities previously forbidden. However, Western conceptions of the body as a model that stands for any bounded system (Douglas 1966 in Lamb [2000]) are not appropriate in Mangaldhi, where the body is fluid and transformative, and gender and age identities are not as strongly linked to the body as they are in the West.
5. The oldest-old, an age category whose definition ranges from over 75 to over 85, number over five million in the United States. Their rise in numbers has been met with great dismay and concern. Some ask whether care and welfare should be rationed, and the National Institute on Aging has made the oldest-old a top priority (Sankar 1984). Almost uniformly, the oldest-old are described as a group of sickly, depressed, lonely, and needy individuals. In this way, they epitomize everything Americans fear about aging. Because the oldest-old evoke the most extreme stereotypes of aging, they provide a striking case study of the cultural construction of aging. Sankar (1984) describes three cultural constructions of the oldest-old that contribute to their marginalized status: 1) the stereotypical approach to the oldest-old as sick, frail and depressed, and thus a burden on society, 2) the symbolic nature of aging, and the oldest-old in particular, as counter to perceived ideals of the American cultural character: sexuality, autonomy, and power and, 3) the construction of the elderly as a diseased and disabled group.  
However, the increased morbidity of this age group, often defined as triad of comorbid medical conditions, poor physical function, and declining health prior to death are epidemiological realities (Miles and Brody 1994). What is not so closely examined is the role of society in producing this status through the marginalization of its oldest-old, rather than accepting their higher morbidity as a natural state that burdens health policy and social resources.

6. Sankar (1984) compares U.S. perceptions of aging with Chinese, with the caveat that comparisons between cultures are problematic in many respects. However, such comparisons may put into limited perspective different ways of constructing and experiencing the aging process. Chinese do not consider old age to be equivalent to illness or disease, but rather as representative of changing flows of *yIn* and *yang chi* in their bodies, like all phases of life, which must be kept in balance with proper lifestyle, diet and if necessary, medicines. The aim of diagnosis is to identify changes in function rather than locate underlying pathology. Whereas Western biomedicine makes marked distinctions between what is treatable and not treatable, the Chinese worldview emphasizes maintaining health rather than treating illness. Aging is not expressed with medical metaphors, as it is in the U.S. Sankar's (1984) urge to recognize aging as a social as well as biological fact in order to understand differences in conceptualizing and responding to aging individuals is an example of early support for a biocultural approach to aging in anthropology.

7. The people of Samoa are considered old when they can no longer perform heavy agricultural work or strenuous domestic tasks, which usually occurs between ages 50-60, although considerable variation is observed (Holmes and Holmes 1995). However, until recently, both young and old Samoans agreed that old age is the finest time in life, as the old enjoy greater freedom, leisure, and reduced social pressure to be productive. Still, older individuals feel it is important to be productive in some way, and the old take on the responsibilities of the "tedious" labor, such as sewing sugarcane thatch roofs and braiding sennit, a coconut fiber twine. Several honorific titles are available to the elderly men in Samoa, while elderly women take on the greatest role in weaving mats, fans, house blinds, bark cloth tapestries, etc., all of which are used as wealth for exchange, as they tend to small children whose mothers are working in the fields.

Despite the influences of modernization in Samoa, there is still support and concern for the elderly, although this has been declining in recent years. Although traditionally old age was considered the "best time in life," recent data shows that less than 15% continue to uphold this belief (Pearson 1992 in Holmes and Holmes 1995). Crews (1994) examines demographic changes in aging Samoans and relates observed trends to sociocultural quantification of old age. Young, middle-aged and old Samoans report varying support for some traditional Samoan customs, which Crews attempts to link to biomedical trends in health and current definitions of elders.

8. See Note 4.

9. Project AGE examines cross-cultural understandings and evaluations of old age in a total of seven communities in Africa, Ireland, the U.S. and Asia. The objective of the project is to investigate perceptions of the course of adulthood and changing concerns with aging. Four major issues are mentioned at all sites, with differing emphasis on each: 1) Physical Health and Functioning 2) Material Security 3) Family and 4) Sociality. The research is novel in that it employs participant observation as a major methodology and seeks to understand the emic perspective of the aging in a Western society like the U.S.

that tends to define its aged from external observations and perceptions. The universality of the major issues is notable, but at the same time, differing emphasis on what is most important for a good old age varies considerably. Understanding the cultural constructions of aging within population socially deemed “old” is just as important, if not more so, as understanding the general cultural constructions of aging in a broader society. For example, recognition of the experience of the elderly for which state-level societies try to provide may benefit the development of policies that are directed toward bettering the welfare of the elderly.

10. Bathing is an important health ritual in Japan. A daily, usually evening, hot bath is a cultural practice, and public baths and hot springs, ranging from bare-minimum and inexpensive to resort-caliber and very expensive, are ubiquitous throughout the country for recreation, therapy, and of course, bathing.

11. *Miso* and soy sauce are both staples of the Japanese diet, particularly in the countryside. Both have a high sodium content. In fact, Ishige (2001) states that 16% of the daily sodium intake of Japanese comes from *miso*, 27% comes from soy sauce, and only 13% from table salt. Unfortunately, I did not probe further on this statement, but it is likely that this woman is talking about table salt rather than the sodium of the dietary staples of *miso* and soy sauce. But this must remain a question for future research.

12. This Chinese medicine had been ordered from the Internet by individual consumers, although it was banned in Japan. Further, the product had been adulterated with the same chemical as the active ingredient in “Fen-Fen” that caused deaths in the United States several years ago. Adulterating Traditional Chinese Medicine products with synthetic drugs is a growing problem in China, and Japanese authorities had warned consumers to beware (Asahi Shimbun, July 2002). Apparently, the women had taken more than was prescribed, and/or ignored symptoms that could have warned them of the ultimately ill effects of the drug (e.g., heart palpitations, sweating, etc.) (personal communication)

13. According to Ishige (2001), the consumption of rice or bread at a meal is mutually exclusive, and the consumption of bread is accompanied by a certain pattern of other dishes, often Western in origin. For example, traditional green tea is never drunk when bread is eaten, and *miso* soup is not served with bread. In short, the menu of bread-associated dishes is a closed system, and consists entirely of Western style foods and excludes Japanese and Chinese-style foods. Many of the informants mentioned eating *miso* soup every day, in which case, rice would accompany that meal. It is possible that this population eats bread on occasion, but if so, more than likely do not consider it to be an integral part of health promotion nor Japanese identity, as much as an indulgence or novelty. In addition, bread is more expensive than rice, making daily consumption more prohibitive for many in this modest rural community.

14. A television program on health that aired while I was visiting Japan in the summer of 2002 focused on the theme of Alzheimer’s disease. During the program, statistics were

presented about the prospective avoidance of senility of individuals who not only eat fish regularly, but who eat certain kinds of fish in certain amounts.

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