Nutritional Anthropology and Me

- Study nutrition and physiology for input-output balance
- Diet-activity approach:
  - Results: modernization of diet was not associated with obesity, but modernization of activity patterns was
- First publications based on dietary change
- Follow-up on growth based on Well Baby Clinic Records
  - Influence of infant feeding practices on child growth
- Recent paper on food, power, and globalization in Samoa to be given at the ASAO in February 2006
- Joined Council on Nutritional Anthropology early 1980s
- Vice President and Editor of the Communicator, 1988-1990

A pet peeve

- Biological anthropology approach to nutrition tends to be heavy on the biology, light on anthropological approaches, tends to have little appreciation for behavior
- See Johnston’s (1987) Nutritional Anthropology
- The first few times that I taught Nutritional Anthropology the classes were heavy on nutrition, physiology, and biology
  - Nutritional intake, energy expenditure, anthropometrics, genes and diet

I supervised two M.A. projects that changed my focus:

- Nutritional survey of a small rural community in Hale County, 1984
  - Most interesting aspects were the informal trade networks based on hunted, gathered and gardened foods
- Study of foodways in the Bahamas, 1984
  - Interesting differences in the use of foods between urban and rural areas, including the overwhelming influence of Miami when they can get food and continue to eat so long as the food lasts.
- As a result, I got involved in trying to understand the cultural aspects of dietary change in Samoa, resulting in one of my articles assigned later in class

A brief historical background

  - Mallory takes a broad cross-cultural perspective on eating, commenting on various practices and seeking the origins of some habits
  - “Anciently (and still in the lower stages of culture) no regular hours for meals were observed. The avocations on which subsistence depended were spasmodic, at least in success, or periodic, in terms of seasons, not hours. Savages eat when they can get food and continue to eat so long as the food lasts.”
A brief historical background

- The switch from experimental studies on animals to human food consumption studies relying on ethnographic material to contextualize the nutritional data occurred in the 1890s
- Von Rechenberg’s (1890) study of the diet of Saxon handweavers.
- Questionnaires, direct observation, and interviews provided the social background to his diet study.
- Dramatic change from the animal based studies of nutrition, or the strict study of consumed foods.

Wilbur Olin Atwater

- First Director of the Office of Experimental Stations of the U.S.D.A.
- Convinced Congress to fund nutrition studies
  - $15,000 per state budgeted by 1890!
- Initiated diet advice based on nutritional composition of foods

Atwater

- Atwater and his collaborator, Charles Woods, selected Tuskegee, Alabama for the OES’s first study of African American food habits in 1895
- Took advantage of Tuskegee Normal and Industrial Institute and Booker T. Washington
  - Appointed Washington research supervisor
  - Enlisted 18 families
  - There was a spring and a winter phase to the study
  - Families were selected daily by a field worker
    - He weighed all foods brought into the household and collected ethnographic information over a period of 2 weeks
  - The families included villagers, tenant farmers, and plantation workers living up to 18 miles away representing a range of social and economic conditions

Tuskegee study

- Class comparison:
  - Those near the village and attached to the Institute lived comfortably
  - Others, particularly families on large plantations, labored in hopelessness and were meant to be typical of most African American farm families in the so-called Black Belt.
- Description of Material style of living:
  - Most families in the countryside around Tuskegee lived in one- or two-room log cabins, with little furniture
    - One or two mats, 400-pound corn meal sack, patchwork coverlet, a clock
    - Also usually a small cupboard, a few dishes, a wooden chest or old trunk for holding food and clothing, a pine table, a few chairs, a pair of andirons and an iron pot
  - Few people owned land. Most rented between 20 and 60 acres
    - Few people generally held at least one muscle on an ox, and most owned at least one pig and some chickens
    - People living in and near the village usually kept a cow

Tuskegee study

- People worked just over 7 months/year
- Farmers devoted most of their land to cotton
  - They grew com (maize), sweet potatoes, sugar cane and sorghum for food, but barely enough to meet their needs
  - Only a few had gardens for growing collards, turnips and other vegetables.
- Staple foods included fat salt pork, cornmeal, molasses, lard and wheat flour
  - Some families were unfamiliar with any meat other than fat salt pork, chicken and game such as possum and rabbit
- Meals were usually served in just one African American household, and its head was an employee of the Institute.

Tuskegee study

- Tuskegee families prepared simple meals
  - Most people sliced their salt pork or bacon thin and cooked it
  - Bacon grease was mixed with molasses to make "syrup".
  - People ate meat and syrup with sourmilk, which they made simply from cornmeal and water-based on a griddle or the flat surface of the oven.
  - There was the standard meal, 3 times a day, 365 days/year with few exceptions:
    - during harvest or when fresh pork and sweet potatoes were served
      - Occasionally, a family prepared an unusual dinner consisting of two helpings of stewed beef, and these were served surrounded by sweet potatoes.
    - People made "cracklin" - by frying fat salt pork until it was brown, crushing it into a mixture of some bread, water, and salt, and baking
    - They also boiled collards or turnips with pork to make the vegetable mix "red".
    - Vegetables other than sweet potatoes were peripheral to the diet.
**Tuskegee study**
- There was a seasonal decline in nutrition which was attributed to a sharp winter decrease in egg and dairy production.
- Farmers in winter had less cash to purchase food.
  - The underlying problem was a so-called "mortgage system".
  - The landowner or absentee would advance the tenant money to buy seed and tools to last from planting to harvesting.
  - The tenant would then grow the crop and repay the advances with interest.
  - When the crop was harvested, the tenant was left with little or no profit.
- Due to the high rates of interest, tenants were forced to sell their crops at the lowest price.
- The system favored the cash crop, cotton, over food production.
- The consumption of bacon, a store product usually purchased in small quantities every week, illustrates the seasonality.
- Consumption dropped from 192 gm/d during the spring months versus 103 gm/d during the winter months.
- The consumption of bacon was a core item as the lender first right to receive the crop.
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**Goss continued**
- Families of both classes ate meals structured around a common core.
  - Corn, wheat flour, beans, eggs, granulated sugar, potatoes, and chilies.
  - Lard or "lard compound" was a core item as well, but meat products were peripheral.
- None of the families used dairy products.
  - Animal products accounted for approximately 15% of the food budget for the lower-class families and 23% for the middle-class households.
  - The middle-class enjoyed a somewhat more varied diet, but still the family ate just 7.5 different foods per week compared to 5 for the lower-class families.
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**A brief historical background**
- Goss (1897) studied Hispanic diets in New Mexico.
  - Took a social perspective on their diet, including looking at class and diet.
  - His sample included one middle-class household and two lower-class households.
  - Neither lower-class household ingested a single gram of animal protein over the course of 14 days of observation.
  - Found consumption of 4 gm of animal protein compared to 29 gm/d for the middle-class household.

- Jenks (1900) studied Native American wild rice gatherers in the upper Great Lakes region.
  - Ethnography had a minor component of nutritional analysis in what was primarily an ethnographic account of "primitive" economics for the Bureau of American Ethnology.
  - This study provides a model for treatment of food in many of the 20th century ethnographies, where it occupies a peripheral position.

**A brief historical background**
- As part of the Office of Experimental Stations series, Woods and Mansfield (1904) studied foods of Maine lumbermen for the U.S.D.A., and provided a dietary study within an ethnographic account.
  - Includes nutritional and metabolic analyses of recorded diets.
- McCarron (1928) studied the diets of Sikhs, Pathans, Bengalis, and other Indian groups by feeding their diets to laboratory animals.
  - He concluded that "the striking differences in the physique of different Indian races are due, in the main, to differences in biological value of their national diets.
- Gilks and Orr (1931) studied metabolic studies among two East African groups, the Masai (ostensibly carnivores), and the Aikipuyu (vegetarians).
  - They concluded that nutritional status was related to diet, and that anthropological factors (the cattle complex) influenced food intake.
Audrey Richards

- Richards (1932, and others) is generally taken as the beginning of the anthropological study of food habits
  - She studied the Bemba of Northern Rhodesia, using a functionalist model to illustrate the interrelationship between diet and other cultural institutions
  - Richards concluded that the reasons natives did not work harder (a primary concern for British mining and other economic interests) was not a question of sloth, but of undernutrition
    - Since men had been drawn away to labor in the mines, woman found it difficult to perform the heavy clearing tasks traditionally assumed by men, in addition to their own cultivation and gathering roles
    - During the period of the year when women most needed food energy to sustain clearing and planting of fields, food was in shortest supply
    - Thus, the woman were enmeshed in an ongoing cycle of underproduction and undernutrition
  - His title "Nutrition and Physical Degeneration" gives an indication of his bias

- Meyer Fortes and Audrey Richards were among the first to work on the social dimensions of food production, preparation, distribution, and consumption
  - They had a concept of the ideal proportion of grain to relish in the ordinary diet, and some women, when they were too tired to gather ingredients for relish, might not prepare the grain either, since it was hard to get the grain down without the lubrication of the relish
  - The social dimensions of food production, preparation, distribution, and consumption
    - Allying relations were marked by prescribed rules for sharing
    - These obligations break down in times of dearth, when people tended to hoard meager supplies

- Richards carefully examined all social relations as they related to food exchange
  - She considered the emotional qualities assigned to different foods
    - Their desirability in terms of taste and digestibility, their importance in the native ceremonial life
      - E.g., the importance of grains used in beer-brewing, and the excitement that accompanied opportunities to eat meat
    - People's perceptions of the nutritional qualities and physiological effects of different staple grains and relishes eaten with them
    - The Bemba seemed to recognize the relationships between low energy intake and lack of energy to perform work, and consciously conserved energy during the lean, cold season

- Her reports, collected by selective observations, interviews, and informal studies over a relatively short period of time, include general descriptions of gardening, crop successions, and time allocated to different food production, collecting, and food processing tasks
  - Her model for the "food" aspect of culture was also interdisciplinary, as she employed botanists, nutritionists, and biochemists to aid in identifying and assessing the nutritional values of foods
  - Her work influenced later studies of the changing interrelationships between social organization of production and distribution of food, diet, and nutrition

A brief historical background

- 1935 the British International African Institute appointed a Diet Committee to construct a comparative nutritional databank
  - Meyer Fortes and Audrey Richards were among the anthropologists collaborating in this effort
  - An early study of the effects of westernization of food products among non-industrialized groups was done by Price (1939)
    - His title "Nutrition and Physical Degeneration" gives an indication of his bias
  - Benedict and Steggerda (1937) studied diet among modern day Mayans in the Yucatan, trying to explain high metabolic rates

- Early 1940's: U.S. National Research Council Committee on Food Habits
  - Set up to study the psychological and cultural patterns of diet
    - One major goal was to understand ethnic food habits to make culturally acceptable recommendations to improve national nutrition during WW II
    - Margaret Mead and Ruth Benedict were anthropologists on the committee
      - Mead (1943) cautioned about the use of anthropology to shape behavior/unitarian directions
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  - Nutritional anthropology took off with the instigation of studies of applications of ethnographic knowledge to nutritional problems
A brief historical background

Regional food habits in the Southwest U.S. were studied in the 1940's, by the Bureau of Indian Affairs and the University of Chicago.

Three Indian areas and two Hispanic areas were surveyed by Ploquin (1945).

The research was used to make changes in the diet of the people with the goal of improving nutrition.

Two spectacular examples of failure based on cultural misunderstanding were noted.

Discouraging pre-mastication of infant foods

Advocating consumption of choke cherries

In an attempt to increase Vitamin C intake,

The consumption of the fresh choke cherry was advocated.

Bougainville in the Solomon islands about the same time.

He described the failures of two attempts to change (“improve”) their dietaries:

- One group were mountain dwellers with taro as a dietary staple.
  - They had calcium and protein deficiencies
  - Women were responsible for planting, harvesting, cooking, and apportioning taro.
  - Residence was matrilocal and inheritance was matrilineal

- In the lowlands, the chiefs chosen to receive seeds were not necessarily gate-keepers.
  - A colonial official gave packets of seeds to the chiefs with instructions how to plant them, and a message that taro was of little nutritional worth.
  - In the mountains, by giving the seeds to the chiefs, not the women responsible for cultivation, the project was immediately doomed.

In consultation with the Indians, a decision was made to go back to pre-mastication.

Breast milk alone is insufficient as a source of iron in the second semester (six months) of life.

Without economic resources to buy infant supplements, the children were becoming malnourished.

In villages where gate-keepers were ignored, or where the official failed to convince gate-keepers of the value of new crops, they were shunned.

Oliver (1943) was studying the inhabitants of Bougainville in the Solomon islands about the same time.

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- The credibility of the official was severely undermined by his belittling of taro, which was a highly valued prestige food in the mountains.

- In the lowlands, the chiefs chosen to receive seeds were not necessarily gate-keepers.
  - In the villages where gate-keeper chiefs were given seeds and convinced of their worth, the new crops took hold.
  - In villages where gate-keepers were ignored, or where the official failed to convince gate-keepers of the value of new crops, they were shunned.

- The diet was well balanced, and the society functioned as ambilineal and ambilocal.

- In the mountains, by giving the seeds to the chiefs, not the women responsible for cultivation, the project was immediately doomed.

From increasing this consumption, several Indians became sick from cyanide poisoning as the amygdalin in the seeds was transformed to poison in the digestive tract.

After one young woman died, the Indians were advised not to eat the seeds, but the way the warning was translated, the fruit was abandoned as a food.

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The other group lived in the lowlands with several staples in addition to taro.

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**A brief historical background**

- Lewin (1943) came up with the channel theory
  - Conceptualizes the movement of food through a group as flow through channels
  - Marketing, processing, producing channels
  - Controlled by gate-keepers
  - Chiefs, priests, nurses, etc.
  - He claimed it was essential to understand and gain the confidence of the gate-keepers in order to effect dietary change
  - This perspective re-emphasizes the importance of ethnographic work

- There are numerous other examples of the application or misapplication of anthropological studies to solving nutritional problems

- In addition to the applied area, nutritional anthropology rose in importance in the 1960's in response to infusions from ecology: Human ecology, cultural ecology, socioecology

- Two famous works from this time period focused on energy flow or input and output of the subsistence regimens: Rappaport among the Maring and Lee among the !Kung

**Rappaport and the Maring**

- Rappaport studied a Maring village in highland New Guinea, and proposed an ecological explanation for the ritual cycle found among the Maring
- He found that as pig populations increase in size, more and more energy is devoted to maintaining the pigs and keeping them out of the gardens, until a critical point is reached and a ritual is performed that includes slaughtering large numbers of pigs and going to war with neighboring groups

**Lee and the !Kung**

- Lee performed an input-output analysis of !Kung Bushmen subsistence practices, concluding that hunter/gatherers have a very easy life in terms of the amount of work that must be done to support the population
  - This work started the school of thought of the original affluence and complicated arguments about the origins of agriculture
A brief historical background

- In the 1970's, work progressed along both cultural and biological dimensions:
  - Thomas produced the definitive energy flow study with his work on energy flow at high altitude among the Quechua
  - One of his students at Cornell stated applying the optimal foraging model to human populations
  - Mary Douglas and others approached diet from the perspective of symbolic anthropology
  - Harris was explaining dietary choices from an adaptive perspective to validate his cultural materialism

More History

- In 1974, the Committee (then Council) on Nutritional Anthropology (CNA) was formed at the AAA meetings in Mexico City
- For several years, CNA was affiliated with the AAA as a special interest group within the Society for Medical Anthropology
- In 1987, the council became a separate unit of the AAA
- The CNA became the Society for the Anthropology of Food and Nutrition (SAFN) in 2004

More History

- The SAFN has these goals:
  - to encourage research and exchange of ideas, theories, methods and scientific information relevant to understanding the socio-cultural, behavioral and political-economic factors related to food and nutrition;
  - to provide a forum for communication and interaction among scientists sharing these interests and with other appropriate organizations;
  - to promote practical collaboration among social and nutritional scientists at the fields and program levels.

Some useful reviews


Journal sources from Messer

- Ecology of Food and Nutrition
- Food and Nutrition Bulletin (and other publications of the United Nations University)
- Food Policy
- Nutrition Research
- World Review of Nutrition and Dietetics
- Medical Anthropology
- Social Science and Medicine
- Medical Anthropology Newsletter (Medical Anthropology Quarterly)
- The Communicator (Newsletter of the Council on Nutritional Anthropology)
Journal sources from Messer

- Culture and Agriculture
- The Digest (Publication of the University of Pennsylvania Food Group of the Department of Folklore and Folklife)
- Food and Foodways
- Appetite
- Human Ecology
- Ethnobiology
- and a gastronomic section in Social Science Information