Samoan Foodways

Jim Bindon
Department of Anthropology
University of Alabama

Why Samoa?
- Island setting ensures population boundaries
- Well known population ethnographically, ecologically
- Historical changes in population since 1940 provide a “natural experiment”

The Samoan Studies Project
- Formulated in mid 1970s to investigate the biological consequences of social change (modernization) among Samoans
- Fieldwork done in Western Samoa, American Samoa, Hawaii, and California
- Over a dozen PhD dissertations in the first decade

My Involvement
- Genetic and environmental factors in obesity
  - Genes
  - Familial aggregation
  - Environment
    - Diet
    - Physical activity
- Follow-up
  - Infant feeding, growth and health
  - Psychosocial stress, diabetes, heart disease

Samoan Foodways
- Traditional Samoan foodways
- The nature of change in foodways with modernization
- Diet-related health consequences

The Adaptive Landscape
- 3,000 - 5,000 years ago: Voyaging to settle the islands of Polynesia
  - Selection for thrifty genotype
- 30 - 50 years ago: Modernization changes lifestyle, behavior
  - Thrifty genotype becomes detrimental as it predisposes to obesity, diabetes, cardiovascular diseases
Pacific Islands

Voyaging

Settled along coastline

Farmers, Fishers

- Banana
- Coconut
- Taro
- Giant Taro
- Secondary
  - Yam
  - Seasonal
  - Breadfruit
- Shellfish and Fish
- Birds and Bats
- Chickens
- Pigs
- Secondary
  - Dogs
- Seasonal
  - Palolo

Swidden agriculture

- Men do the work of clearing the forest to make way for a new garden
- Women help with weeding and harvesting
- The success of the garden is said to depend on the hard work of the men

Burning field on hillside in preparation for planting the new garden
Birds, Bats

Chickens

Poi Dog

Traditional Meals

- Light morning meal
- Larger evening meal
  - Eaten after the plantation work and fishing had been done

Palolo

Palolo bundles
Meal Preparation

- Untitled men are in charge of preparation of the main meal
  - Food preparation
  - Construction of the fire and the rock oven
  - Placing the food on the rock oven
  - Taking the food off when cooked
  - Dividing up foods that need to be specially allocated (pigs, bonito, turtle, etc.)

Preparing the food

Making the Umu

Finally, cover the oven with old leaves from prior meals

A Samoan Meal

- **Mea a’ano**
  - Starchy foods that make up the bulk of any Samoan meal
    - Taro, banana, breadfruit, giant taro, yam
  - **I’i**
    - Accompanying foods
      - Meat or fish to complete the meal

Gender and Food

- Men are responsible for the production of the real food (**mea a’ano**) and for the high prestige fish foods
  - Inland (**‘ulu**) is the men’s realm
    - Heavy clearing of forest, garden harvesting work, cooking at the cookhouse (fale umu)
  - Outside the reef (**vasa**) is also a dangerous realm
    - Men do the fishing for bonito, turtle, shark
  - Women are responsible for the daily accompanying foods (**i’i**)
    - Toward the beach (**i’i tasi**) is the women’s realm
      - Gathering shellfish, etc. from the reef

Dietary Delocalization

- Missionaries open up Samoan Islands in the 1850s
  - Introducing Western foods
- Whalers and traders use Samoa as a port of call from 1850 on
  - By the 1880s, the Samoans had eagerly adopted two new types of food: canned meats and fish, and flour
    - 1881 flour price in Asia
  - New foods were coming in “from the beach” hence within the women’s realm
- Increasing commodification of agriculture
  - Increasing imports and exports of food
  - Coconut products are still responsible (2002) for 90% of the exports from Samoa
Partitioning of the Islands

- Colonial competition between Germany, Great Britain, and the U.S. starting in the 1880s
  - Treaty signed by the three powers in December 1900
    - Germany takes over large islands west of 171 west longitude
    - The U.S. controls the small islands east of that line
    - Great Britain receives concessions in Tonga and the Solomon Islands

The Western Islands

- Germans try to establish plantations
  - Melanesians imported as workers
- New Zealand Protectorate in 1918
- Independence in 1962
- Minimal economic development
  - 50+% men, 80+% women unemployed
  - Agriculture accounts for 65% of productivity

American Samoa in the 20th Century

- Naval base in the Pago Pago Harbor, more G.I.s than Samoans during WW II
- Navy withdraws in 1951 causing economic depression, emigration
- "Great Society" accelerates economic development in 1960s
- 2001: 16% unemployment
  - 33% jobs in government, 33% tuna canneries, 34% other
Research Sites
- Rural villages/islands (most traditional samples)
  - Falealii, Saledumu, Salea’au’ua, Manu’a
- Urban/Acculturated villages/islands
  - Apia, Tutuila
- Migrants
  - Oahu, Hawaii

Obesity among Samoan Adults

<table>
<thead>
<tr>
<th></th>
<th>Percent Obese</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Western Samoa</td>
<td>28.6%</td>
<td>52.6%</td>
</tr>
<tr>
<td>American Samoa</td>
<td>58.6%</td>
<td>76.9%</td>
</tr>
<tr>
<td>Hawaii</td>
<td>67.7%</td>
<td>74.4%</td>
</tr>
</tbody>
</table>

Weigh and Measure

Assess Diet
**Diet and Obesity**

- The following measures of diet show **NO ASSOCIATION** with obesity:
  - Total calories
  - Calories from fat
  - Total fat
  - Total fiber
  - Types of foods consumed (traditional versus introduced)

**Evaluate Activity**

- Activity is associated with obesity
  - More active Samoans are less likely to be obese
  - Activity based on occupation

**Activity and Obesity**

American Samoan men, 1976

- Dietary delocalization has been going on since 1930
  - More and more agricultural commoditization has led to increasing exports and imports of food
  - Modern foods have been incorporated into traditional ideology and meal plans
  - Caloric intake may have decreased with modernization, but expenditure has decreased even more, resulting in widespread obesity

**Conclusions**

- Zofia Soitua