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Carolina in the Carolines: A Survey of Patterns and Meanings of Smoking on a Micronesian Island

Tobacco use—especially smoking industrially manufactured cigarettes—kills nearly 5 million people annually and is the leading preventable cause of death worldwide. Tobacco is a widely used global commodity embedded in cultural meanings, and its consumption involves a set of learned, patterned social behaviors. Seemingly, then, tobacco offers a most appealing anthropological research topic, yet its study has been relatively ignored by medical anthropologists when compared to research on alcoholic beverages and illegal drugs. To help fill this gap, this article sketches the historical background of tobacco in Micronesia, presents the results of a cross-sectional smoking survey from Namoluk Atoll, and describes contemporary smoking patterns and locally understood symbolic associations of tobacco. Intersections among history, gender, local meanings, the health transition, and the transnational marketing of tobacco are addressed, and cigarette smoking is seen as part of a new syndemic of chronic diseases in Micronesia. [tobacco; health transition; syndemic; Micronesia]

Introduction

The title of this article draws attention to the similarity in names between the Carolinas of the southeastern United States—location of the famous "tobacco row"—and the Caroline Islands of Micronesia in the northwestern Pacific Ocean (see Map 1).[1] But my concern here is with another kind of link between these two seemingly disparate and unconnected places: the reach of global capital via the transnational marketing of cigarettes manufactured in the United States and advertised and sold in Micronesia. In exploring how this linkage came about, and how it has affected the people of Namoluk Atoll,[2] I sketch the historical background of tobacco in Micronesia, summarize the results of a 1995 cross-sectional smoking survey of nearly 300 Namoluk people, and then briefly describe contemporary smoking patterns and locally understood symbolic associations of smoking. This allows us to touch on issues of broader anthropological import: the

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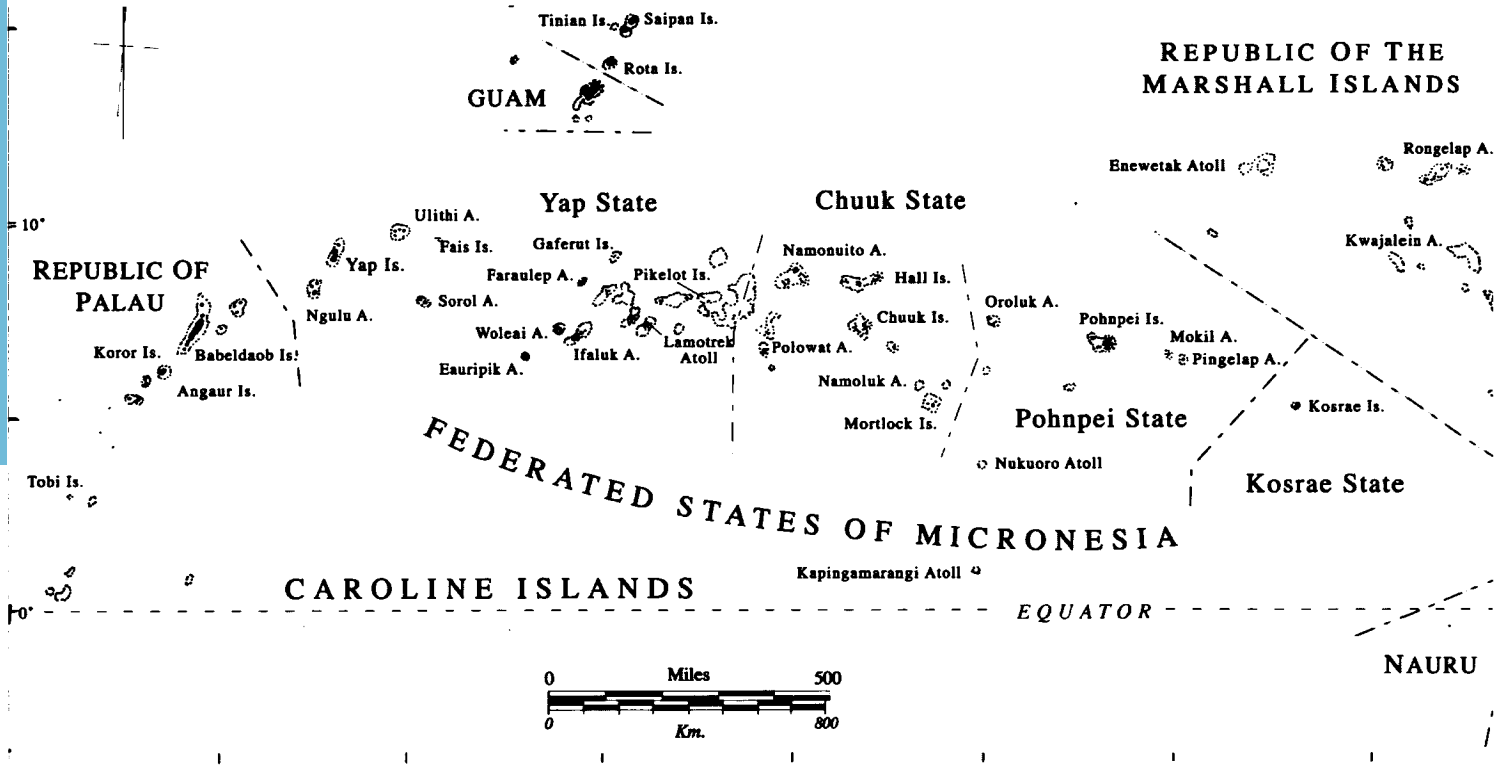

Map 1
Micronesia, including the Caroline Islands.

intersections among history, gender, local meanings, transnational marketing of commercial products, and public health.

The people of what is now Chuuk State, Federated States of Micronesia (FSM) (see Map 1), were unusual for not using any psychoactive substances before contact with the outside world. Tobacco appears to be the first such substance that made its way to these islands, and it was taken up avidly once it became available (Marshall 1981). Subsequently, beverage alcohol became part of Chuukese people's experience, and more recently, marijuana, betel, and gasoline sniffing (Marshall, Sexton, and Insko 1994) have been added to their recreational drug pharmacopoeia. Cigarettes remain the most widely consumed of these drug substances (Marshall 1990), and chewing tobacco also became popular during the 1990s.

Given tobacco's enormous negative health impact, given that its consumption is embedded in and encoded with cultural meanings, given that tobacco products are heavily used global commodities, and given that smoking (or chewing) tobacco is a learned, patterned, and typically social behavior, it is a most appealing research subject for contemporary anthropologists. Although recent studies of tobacco by medical anthropologists have examined its role in morbidity and mortality, when I searched the broader anthropological literature for publications on tobacco, I discovered that this substance also has garnered some attention over the past 20 years from scholars who do not focus primarily on its negative health consequences.

For example, Peter Black (1984) advocated for what he called "an anthropology of tobacco use," and his forward-looking article continues to be highly pertinent to research that remains to be conducted today. Soon thereafter, Johannes Wilbert (1987) provided a detailed exploration of the social practices surrounding tobacco ingestion among native South American peoples, including its widespread use by shamans to induce altered states of consciousness and hallucinations. In the same year, Knauft (1987) discussed traditional patterns of tobacco use among the Gebusi of Papua New Guinea, and Carucci (1987) examined the place of smoking in the Marshall Islands, with special attention to Ujelang/Enewetok. Hays (1991, 2003) has continued to study the introduction and spread of tobacco to New Guinea and its role in the colonial encounter; likewise, Brady and Long (2003) have attended to the ways that tobacco was caught up in the complex exchanges among Southeast Asians, Europeans, and Aboriginal Australians. But given the extent of tobacco's contemporary global importance as an item of trade and consumption, these studies are few and far between, and an enormous need exists for more anthropological research on tobacco.

Tobacco, Health, and Medical Anthropology

Tobacco can be studied as a commodity involved in international trade, but the smoking of commercially manufactured cigarettes and other forms of tobacco use exacts a huge annual toll on global health. There are an estimated 1.3 billion current smokers worldwide, 650 million of whom "are expected to die prematurely from tobacco" (Late 2005:1). The World Health Organization (WHO) calculates that 4.9 million people die each year from tobacco-related illnesses, a number they predict will more than double by the year 2030, and WHO notes that tobacco use is the leading preventable cause of death (Late 2005:1; *New York Times*, October

16, 2002, p. A6). Squier and Dreher comment that "Seventy percent of those [tobacco-related] deaths . . . will occur in developing countries, and in China, alone, it is predicted that there will be 2 million deaths due to smoking by 2025" (2000:153). Mortality estimates such as these suggest that medical anthropologists who specialize in alcohol and other drug studies ought to concentrate particularly on tobacco research, yet this has been far from the case. Research on tobacco has been relatively ignored compared to that carried out on alcoholic beverages and illegal drugs (see Marshall, Ames, and Bennett 2001).

Notwithstanding continued calls sounded during the 1980s for attention to the "tobacco epidemic" (e.g., Müller 1983; Yach 1986), by the end of that decade very few medical anthropologists had entered into these discussions (see, e.g., Marshall 1981; Stebbins 1987). Even as the "tobacco wars" heated up in the West during the 1990s, most medical anthropologists continued to ignore smoking and health, leading Kenyon Stebbins to express surprise, "given the global impact of tobacco and its inherently anthropological nature" (2001:148). Although a number of articles on tobacco smoking have been published quite recently based on research in the United States (e.g., Hall, Lopez, and Lichtenstein 1999; Mark Nichter 2003; Mark Nichter et al. 2002, 2004; Mimi Nichter et al. 1997, 2004; Quintero and Davis 2002), research into this subject by medical anthropologists working elsewhere on the globe continues to languish.

Most of the medical anthropological work on tobacco and health that *has* been accomplished outside the United States has been done at a macro-level, examining national, regional, or global trends (e.g., Marshall 1990, 1991a, 1991b; Mark Nichter and Cartwright 1991; Stebbins 1990, 1994, 2001; Willms and Stebbins 1991). With the exceptions of two relatively recent articles (Mehl 1999; Mimi Nichter, Nichter, and Van Sickle 2004), very few micro-level data derived from ethnographic research in local communities outside the West have been published, and one goal of this article is to help fill this lacuna.

Before addressing the history of tobacco in Micronesia, it is necessary to set tobacco use in developing countries in a wider context. Following publication of reports in the late 1950s and early 1960s that linked cigarette smoking to lung cancer and a host of other chronic diseases, there was nearly a 20-year hiatus before warnings began to appear that "the smoking diseases" (Prior and Tasman-Jones 1981:260) would result in looming epidemics in developing countries around the world (Müller 1978; Wickstrom 1979). Soon thereafter, WHO began to publicize and disseminate tobacco control strategies to developing countries to combat the worldwide smoking epidemic (e.g., Roemer 1982; WHO 1983). Although by that time the huge transnational corporations (TNCs) that dominate global tobacco production and sales had engaged in international trade for decades, more or less coincident with the greater public health attention to a "tobacco epidemic," they began an aggressive search for new markets in the developing world. Three of the largest of these TNCs—RJR Nabisco, Philip Morris, and Brown and Williamson/British American Tobacco—have deep roots in North Carolina (see Goodman 1993) and manufacture the cigarettes that dominate Micronesia's market. They form the primary connection between Carolina and the Carolines.

Barnet and Cavanagh observe that no simple explanation exists "for the phenomenal success of the global tobacco industry in marketing a lethal product that leaves a trail of disease, misery, and rising health-care costs across the world"

(1994:185). They go on to point out that "the cigarette is the world's most profitable globally distributed consumer product" (1994:185), with an average profit margin of about 35 percent per cigarette. As is widely known but often ignored, "The extraordinary profits in making cigarettes are directly traceable to the pharmacology of tobacco. Nicotine is more addictive than either alcohol or cocaine" (1994:185).

Micronesian smokers are hooked on cigarettes, and they expend a considerable portion of their limited cash resources on their addiction. The average price of a pack of cigarettes throughout the FSM in 1995 was $1.90, and in Chuuk State it was $2.05. In terms of the economic opportunity costs of smoking, in 1995 the money spent on a pack of cigarettes in Chuuk would buy two 15-ounce cans of mackerel or two 7-ounce cans of tuna or a 12-ounce tin of corned beef with change left over. In a week's time, a pack-a-day smoker in Chuuk spent more on cigarettes than the cost of a 50-pound bag of rice.

The History of Tobacco in Micronesia

Accompanying the Europeans' exploration and colonization of the New World and their subsequent global reach, tobacco was carried worldwide from the Americas to Africa, Asia, Australia, Europe, and the Pacific Islands between the 16th and 18th centuries (Courtwright 2001; Matthee 1995; see also Marshall 2000). Spanish, Portuguese, and Dutch colonizers brought tobacco to the East Indies, and Mejía (1992:133) states that the Spaniards introduced tobacco cultivation to the Philippines during the first quarter of the 16th century. By at least 1601, the plant was also being cultivated in Java (Gilmour 1931). Within a couple of decades, tobacco became widespread throughout Island Southeast Asia and coastal East Asia, including Japan (Laufer 1924).

At approximately this same time, in the early 17th century, Malay traders and hunters in search of bird-of-paradise plumes and similar riches appear to have carried tobacco from the European outposts in Island Southeast Asia to Australia and New Guinea (Brady 2001:121; Hays 2003:60; Marshall 1987:31). Then, as Europeans contacted peoples elsewhere in the Pacific Islands, tobacco spread along with them. It originally reached the islands of Micronesia from Manila late in the 17th century, carried to Guam by the Spanish colonizers of the Mariana Islands when they first established a presence there in 1668. By November 1693, and probably some years before then, the Spaniards included tobacco in the supplies to their garrison (Driver 1988:36).

Guam subsequently became the primary dispersal point to other parts of Micronesia for both the spread of the plant and methods of smoking it, principally via the trading voyages to the Marianas made by sailors from the Caroline Islands. In this way, during the 18th century, tobacco reached Yap proper, the outer island atolls of Yap State, the high islands of Chuuk Lagoon, and the surrounding atolls of Chuuk State, FSM (see Map 1). One strong bit of evidence that supports this scenario is the name for tobacco in Chuuk Lagoon: *suupwa*. This word derives from the Spanish verb *chupar* "to suck," used to describe the process of smoking the large cigars favored by the Spaniards who settled on Guam (Paloma Albalá Hernandez 1992:240).

The tobacco plant thrives on Chuuk's high volcanic islands, and it was widely planted during the 19th century. Tobacco grows much less well on coral atolls, where it must be planted close to the taro swamps near the middle of the islets, both to shelter it from salt spray and to provide a somewhat richer soil in which it can grow. Foreign traders came quite late to Chuuk because of its warriors' fearsome reputation, and not long after the traders arrived, Protestant missionaries established a presence, beginning in the 1880s. Consequently, trade tobacco played a somewhat less important economic role in Chuuk State than it did farther to the east in Pohnpei, Kosrae, and the Marshall Islands.

Germany succeeded Spain as the colonial power in Micronesia right after the Spanish-American War, and soon afterward, at the outbreak of World War I, Germany withdrew its military from the islands to protect the homeland. Japan filled the resultant political vacuum and subsequently received a League of Nations Mandate over Micronesia. According to Goodman (1993:94), the Japanese converted relatively early and rapidly to manufactured cigarette smoking from other forms of smoking (e.g., pipes, cigars, and hand-rolled cigarettes)—by the 1920s, and perhaps a bit earlier. During the Japanese colonial period (1914–45), a few Micronesians may have had access to manufactured cigarettes, although it is probable that most smoking by islanders was still of locally grown tobacco until after World War II. This assumption is bolstered by the fact that manufactured cigarettes were not readily available on Guam until 1948 (Nygard 1984:30). Once again, following the end of the war Guam served as a central dispersal point for tobacco to the Caroline Islands—this time of imported commercially manufactured American cigarettes.

From at least the late 1940s on, then, fewer and fewer Micronesians smoked homegrown tobacco, and over the past 60 years nearly all of them have switched completely to industrially manufactured cigarettes. These cigarettes come either from the United States or from U.S.-owned subsidiaries in the Philippines. Today, the distributors of tobacco products throughout the FSM are located on Guam, from whence they push the products of "the Carolina Three": Philip Morris, RJR Nabisco, and Brown and Williamson/British American Tobacco. Two brands in particular—RJR Nabisco's Winston and Philip Morris's Benson & Hedges—dominate the contemporary FSM market (see Marshall 1997).

The Namoluk Smoking Survey

In years past, some survey data have been published on community-level tobacco use in the Pacific Islands, but most of these appeared from 1975 to 1981 (*they are summarized in* Marshall 1991b and Tuomilehto et al. 1986). More recent survey material exists for some Polynesian (Bindon and Crews 1990 for Samoa; Wessen et al. 1992 for Tokelau; Woodward, Newland, and Kinahoi 1994 for Tonga) and Melanesian (Groth-Marnat, Leslie, and Renneker 1996 for Fiji) peoples, but to date no comparable data have been published for a Micronesian population. The Namoluk smoking survey is thus the first specific investigation of its kind for any of the islands in Micronesia.[3]

As one component of a larger study of tobacco and public health in the FSM between mid-March and mid-May 1995 (Marshall 1996), I administered a one-page survey questionnaire on tobacco use to 293 people over 13 years of age from

Table 1
Namoluk Tobacco Survey Sample by Age and Gender, 1995.

	Males		Females		Total	
Age Cohort	**No.**	**Percent**	**No.**	**Percent**	**No.**	**Percent**
13–14	4	3	7	4	11	4
15–19	24	18	28	18	52	18
20–24	15	11	19	12	34	12
25–29	12	9	16	10	28	9.5
30–34	18	13	15	9	33	11
35–39	15	11	18	11	33	11
40–44	10	8	12	7.5	22	7.5
45–49	17	13	10	6	27	9
50–54	3	2	7	4	10	3.5
55–59	7	5	9	6	16	5.5
60–64	3	2	6	4	9	3
65–69	0	0	3	2	3	1
70–74	5	4	4	2.5	9	3
75+	1	1	5	3.5	6	2
Total	134	100	159	100	293	100

Data were gathered between March 17 and May 18, 1995. Surveys were not administered to anyone under age 13.

Namoluk Atoll, Chuuk State, FSM. I have studied this community, which is located to the southeast of Chuuk Lagoon (see Map 1), for the past 35 years, and I have extensive ethnographic background information to supplement the specific data obtained via the survey (see, e.g., Marshall 2004). A brief summary of the survey findings follows.

Respondents were asked whether they had ever tried smoking and whether they still smoked at the time of the survey. Current smokers were asked about their frequency of smoking over the past 3 months: daily, 3 or 4 days per week, once a week, twice a month, or once a month. The number of cigarettes usually smoked was then explored, along with the brand they preferred to consume (Winston, Salem, Marlboro, Benson & Hedges, Camel, other). Finally, smokers were asked what they felt smoking did for them.

The Namoluk population numbered 763 at the end of April 1995, so the 293 people surveyed represented 38 percent of the total. The over-age-10 population was 547 on the above date, so those surveyed comprised 54 percent of Namoluk people over 10 years of age. Because I did not question anyone between the ages of 10 and 12, the survey sample is actually closer to 60 percent of those teenagers and adults 13 years or older. Table 1 presents the survey sample by age and gender.

As is typical for most developing country populations, a far higher proportion of males smoked than females. Eighty-four percent of the males had at least tried cigarettes, whereas only 27 percent of the females had done so. Of those people who continued to smoke, 47 percent of the males ($N = 63$) but only 6 percent of

Table 2
Namoluk Daily Smokers by Gender and Number of Cigarettes Smoked per Day, 1995.

	Males		Females		Total	
No. Cigarettes/Day	No.	Percent	No.	Percent	No.	Percent
>20	12	22	0	0	12	20
16–20	19	35	1	14	20	33
12–15	6	11	0	0	6	10
9–12	4	7	2	29	6	10
5–8	10	19	3	43	13	21
1–4	3	6	1	14	4	6
Total	54	100	7	100	61	100

the females ($N = 9$) in the sample did so. Not only were many more males current smokers, but males also smoked more cigarettes per day. Of the 54 males who were daily users, 41 (75 percent) smoked at least half a pack (nine or more cigarettes), whereas only three of the seven women (43 percent) who were daily users smoked that much (see Table 2).

Substantial numbers of Namoluk people have moved to other locations besides their home island during the past 35 years (for details see Marshall 2004); consequently, the survey was conducted not only on the atoll ($N = 123$), but also in the urban center on Wééné Island, Chuuk ($N = 110$), and in several places outside of Chuuk State ($N = 60$).

Brand Preferences

Of the male smokers on the atoll, 88 percent (21/24) preferred to smoke Winstons, and the figures for male Namoluk smokers on Wééné were similar (81 percent; 22/27). Of the nine Namoluk females who were current smokers, only one resided on the atoll; three were on Wééné, and the other five were outside of Chuuk State. Namoluk women were more likely to smoke if they were located away from their home island, and even more so if they were resident outside of their home state (see Table 3). Only two female smokers in the sample (both of whom were located off the atoll) expressed a preference for Winston; the rest preferred Benson & Hedges ($N = 4$), Marlboro ($N = 2$), or Capri ($N = 1$).

So, why do Namoluk men prefer Winstons? In Chuuk, young men are initiated into smoking by being offered a draw on someone else's cigarette. Among Namoluk men in 1995, Winstons with filters had a reputation for being milder and less dangerous to health than unfiltered Camels, the once-upon-a-time favorite on the atoll. Thus, most adult men who had the money to afford cigarettes purchased Winstons, and those who began smoking did so by "getting used to" the taste of Winstons. When these younger men had the wherewithal to purchase cigarettes, they bought Winstons, the brand with which they were already familiar. This practice remained true among most Namoluk men on Wééné, but much less so for those away from Chuuk State.[4] Of the 12 current male smokers in this last

Table 3
Current Smokers and Nonsmokers by Number and Location, 1995.

	Current Smokers				Current Nonsmokers					
	Males		Females		Males		Females		Total	
Location	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Namoluk	24	38	1	11	24	34	74	49	123	42
Wéénéé Island	27	43	3	33	33	46	47	31	110	38
Guam	9	14	3	33	7	10	22	15	41	14
Other*	3	5	2	23	7	10	7	5	19	6
Total	63	100	9	100	71	100	150	100	293	100

*Includes Namoluk persons on Ettal, Pohnpei, Yap, Palau, and in the United States.

group, 10 preferred something *other than* Winstons, with Marlboro the primary choice. Combined with the female Namoluk smokers away from Chuuk State, 88 percent (15/17) of Namoluk smokers living outside Chuuk preferred a brand other than Winston. This result was not simply a result of access to a greater number of brands, since 13 different brands were available for sale in Chuuk during April 1995.[5]

So, why don't Namoluk women prefer Winstons? Quite like what Wank (2000:277) reports for China, smoking is considered "bad" or "inappropriate" behavior for women on the atoll, and women face considerable social pressure not to smoke (note that there was only one current female smoker on the atoll in the sample). Smoking, then, is gendered and coded as "male" behavior on Namoluk. Moreover, cigarettes often are an extremely scarce commodity when supply ships do not call regularly at the atoll. Although shipping is somewhat more frequent today than in times past, people often run low on or run totally out of cigarettes. If they are regular smokers, this is a severe hardship for them. In such circumstances, Namoluk men are disinclined to "waste" cigarettes on women, even if the woman is a known smoker. On Wéénéé or outside of Chuuk State, by contrast, women face less social pressure not to smoke (though smoking is still frowned on for them), and a ready supply of cigarettes is always available in the stores.

Contemporary Namoluk Smoking Patterns and Their Symbolic Associations

Tobacco is locally classified as a comestible, along with other things that are taken into the body orally. On Namoluk (where tobacco is called *tamak*), one "drinks" a cigarette, *wún tamak*. Local belief is that tobacco relieves hunger and provides one with "strength," *meefi péchékkúl*, attributes that Goodman notes Amerindians "widely held" as well (1993:30). As with food and drink on Namoluk, tobacco should be shared with others (but not with one's opposite-sex siblings) and is a means by which one demonstrates generosity and caring. When cigarettes are plentiful, those who have them will give single cigarettes to others to smoke by themselves. As supplies become limited between calls by trading vessels, smokers will share their remaining tobacco by passing a cigarette around among a group of men, each taking a deep draw before handing it to the next person. Actually,

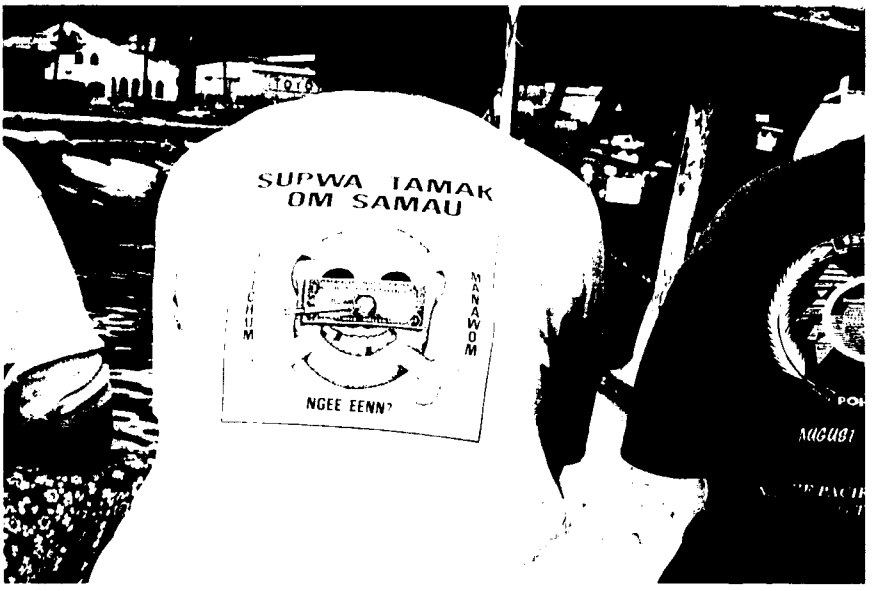

Figure 1
A young woman from Oneop, Mortlock Islands, Chuuk at the main dock on Wééné Island, July 2001. Her T-shirt reads: "Tobacco makes you sick. You have the ability to choose health. What will you do?"

this pattern of sharing a cigarette occurs even when supplies are plentiful, as it is considered good manners to share with another if he signals a desire to do so.

A final set of ideas concerning smoking on Namoluk connects to Christianity. Missionization, first by Protestants and later by Catholics, occurred in the late 19th and early 20th centuries on the atoll, and today almost everyone claims to be a Christian. However, to be truly *soulang,* literally "a heavenly person," one should not smoke tobacco or drink alcoholic beverages, among other proscriptions. Being soulang is a very important part of everyone's personal reputation, but it becomes especially important for women from adolescence onward, whereas for men it does not become as significant until they reach their 30s or 40s and begin to vie for positions of lay leadership in the churches. The association between avoidance of alcohol and tobacco and demonstration of one's commitment to Christianity had its roots in the conversion process, during which time American and Hawaiian missionaries of the American Board of Commissioners for Foreign Missions focused on these behaviors as a way to distinguish their flock from those who had yet to convert (see Marshall and Marshall 1976). From the beginning, women have been the backbone of the Micronesian churches, and good Christian women are not supposed to smoke or drink. These beliefs account in large measure for the great gender disparity in use of tobacco and alcoholic beverages.

Thus, tobacco on Namoluk carries a number of powerful symbolic associations: it is a comestible, it is something that provides strength and vigor (although people are now well aware that it can contribute to ill health—see Figure 1), and

it is something to be shared with others as a way to demonstrate generosity and to cement ties of kinship and friendship. Tobacco also is used in ethnomedicine, in love magic, and in lovemaking, but those topics must await exploration elsewhere.

Tobacco Use, Syndemics, and Lifestyle Diseases in Micronesia

In an earlier article I documented and discussed the impact of tobacco-related illnesses in the FSM from 1970 to1995, drawing on national government statistics and information from the research literature (Marshall 1997). That work showed that tobacco use—notably cigarette smoking—contributed heavily to the diseases that are the leading causes of death in the FSM: cardiovascular disease, cancer, cerebrovascular disease (stroke), and acute and chronic respiratory ailments (pneumonia, influenza, bronchitis, emphysema, and asthma). Of course, there is no simple or automatic cause-and-effect relationship between these diseases and smoking. Rather, such chronic illnesses typically have multiple causes and occur in complex personal and social environments.

There have been very few studies of the smoking diseases in the Caroline Islands, but a few ominous statistics are available. Using data from the early 1980s, Henderson et al. (1985) reported that the primary cancer incidence site for males in Micronesia in 1980–82 was the lung. When oral cancers and cancer of the larynx, esophagus, and pharynx were added to lung cancer in this sample, the total accounted for slightly over 49 percent of all cancers by site (as reported in Paksoy, Bouchardy, and Parkin 1991:638). A few years earlier, Brown (1978) and Brown and Gajdusek (1978) found exceptionally high rates of asthma, chronic bronchitis, and chronic obstructive pulmonary disease on Ifaluk and Ulithi (atolls located in Yap State, FSM, in the Western Carolines). They noted that while smoking was not the only cause of these illnesses, it was certainly a contributing factor. Brown wrote that they were "unaware of any population in which both asthma and chronic lung disease are as prevalent as in the Micronesians of the Western Caroline Islands," and further that "by our own tally, 27% of all mortality in the Yap Outer Islands has been due to respiratory illness, mostly in patients with chronic lung disease" (1978:327).

Since the end of World War II, the FSM (including Namoluk) has passed through the health transition, and has seen well over half of its population move to urban centers or migrate beyond the country's borders (especially to Guam, Hawai'i, and the U.S. mainland; Marshall 2004). In this same period, there have been profound alterations in patterns of diet and exercise. Beer, canned or frozen meat (including such high-fat items as turkey tails), polished rice, and motor vehicles all accompany cigarettes among the top five import commodities by value for the FSM (Marshall 1997:414), and it can be argued that all of these elements play a role in a new chronic disease syndemic that now afflicts Micronesian people.

In a stimulating and important recent article, Singer and Clair maintain that:

> syndemics are not merely co-occurring epidemics in populations that are embodied as coinfections or coexistent afflictions of or within individual patients. They also involve the interaction of diseases or other adverse health conditions (e.g., malnutrition, substance abuse, stress) as a consequence of a set of health-threatening social conditions (e.g., noxious living, working or environmental

> conditions, or oppressive social relationships). In other words, a syndemic is a set of intertwined and mutually enhancing epidemics involving disease interactions at the biological level that develop and are sustained in a community/population *because of harmful social conditions and injurious social connections.* [2003:428–429]

Tobacco use among Namoluk people is one important contributing factor, among several, for a syndemic that has shaped the community's marked rise in morbidity and mortality from cardiovascular disease and stroke, cancer, and chronic respiratory diseases. In this syndemic, tobacco smoking interacts with obesity (brought on in part by a new diet high in fats, sugar, and salt), with binge beer drinking (which may also contribute to weight gain among men), with less physical exercise (occasioned by office jobs and riding in motor vehicles instead of walking), and with heightened stress (instigated by crowded, noisy, and often unsanitary urban living conditions).

In a nice summary of a great deal of information, Anne McGinn presents a table that shows worldwide mortality from chronic or noncommunicable diseases in 1993, along with recommended dietary and lifestyle preventive measures (1997:67). She shows that in that year, heart disease killed 5.4 million, cancers 4.06 million, and stroke 3.9 million people globally, all of which are related to tobacco use and all of which figure among the leading causes of death in the FSM. McGinn specifies "eliminate smoking" as among the more important dietary and lifestyle preventive measures for heart disease, stroke, and cancers of the lung, larynx, lip and mouth, esophagus, pancreas, and bladder. She goes on to report that:

> Within 25 years, tobacco-induced illness is expected to overtake infectious disease as the leading threat to human health worldwide. Developing countries are especially at risk because more people are smoking and, on average, each person is smoking more manufactured cigarettes—a potent and concentrated form of tobacco—than 20 years ago. [1997:71]

McGinn's information is sobering for developing countries like the FSM that have passed through the health transition. But even granting the centrality of smoking as a threat to human health, this behavior—deeply embedded as it is in cultural meanings—must be approached as part of a larger syndemic if prevention programs are to prove successful. Smoking, eating, and exercise regimens are all behavioral patterns that potentially lend themselves to modification; hence they are fertile ground for medical anthropology and public health. Before behaviors and beliefs can be altered, however, they must be understood, and at present we have far too little information for non-Western peoples about smoking behaviors and the cultural beliefs that surround them.

Conclusion

The people of Namoluk Atoll probably have known of tobacco for close to 300 years, and have definitely had direct access to it for at least 130 years. They are familiar with how to grow the plant and cure its leaves for smoking, although today all who smoke use commercially manufactured cigarettes, especially Winstons. The percentages of Namoluk men and women who smoked at the time of the

1995 survey were nearly identical to the worldwide developing country averages reported by McGinn (1997:73): 47 percent of males (versus McGinn's 48 percent) and 6 percent of females (versus McGinn's 8 percent).

WHO has listed tobacco smoking as the fourth highest major global health risk (after lack of food, unsafe sex, and high blood pressure), and smoking also is linked to hypertension, which ranks just above it in this list (*New York Times*, October 31, 2002, p. A11). Even though Namoluk people and other Micronesians have become well aware of smoking's dangers to good health in recent years (see, e.g., Figure 1), strong social pressures continue to support tobacco use by men and experimentation with cigarettes by adolescent males. As the chronic diseases that are linked to regular smoking have begun to exact an ever-higher toll from the island's populace, however, people have become worried. And as more middle-aged adults succumb to cardiovascular disease, stroke, lung cancer, and the like, the opportunity exists for a meaningful public health campaign to alter the positive symbolic associations that smoking retains for men. Even though the tobacco TNCs have begun to target women in developing countries as a large potential pool of future "customers" (see Kaufman and Nichter 2001), Namoluk women may continue to largely avoid the smoking epidemic due to their religiosity. Whether the unlikely but still sturdy tie between the Carolinas and the Carolines can be frayed, or even broken, remains to be seen, but in recent years the first moves toward tobacco control taken by the FSM government (Marshall 1997) have definitely been steps in the right direction.[6]

NOTES

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1. Both names derive from Carolus, the Latin form of Charles. The Caroline Islands of Micronesia were named after Charles V of Spain during the era of Spanish exploration in that part of the Pacific Islands in the 1500s, whereas the Carolinas (both North and South) in the United States were named in honor of Charles I of England following the granting of a land charter by England's Charles II in 1663.

2. Namoluk is a small coral atoll located approximately 125 miles southeast of Chuuk Lagoon in the Eastern Caroline Islands of Micronesia. Taken together with several other nearby coral islands, culturally and linguistically Namoluk forms part of a grouping known as "the Mortlocks." The community is one of 39 municipalities in Chuuk State, which is, in turn, one of the four states that comprise the Federated States of Micronesia (FSM) (see Map 1).

3. Pinhey, Workman, and Borja (1992) conducted a Behavioral Risk Factor Survey ($N = 402$) on Guam that included questions about tobacco use along with alcohol and betel consumption, and I (Marshall 1990) gathered some limited data on tobacco as part of a larger substance-use survey ($N = 1{,}000$) on Wééné Island, Chuuk.

4. In April 1995, cigarettes in Chuuk's urban center cost between US$1.50 and US$2.30 per pack. At an average price of US$1.85 per pack, Winston was neither the least nor the most expensive brand, so price alone cannot account for Namoluk men's preference.

5. In alphabetical order, these brands were America, Benson & Hedges, Kent, Kool, Kool Lights, Lucky Strike, Marlboro, Now, Richland, Viceroy, Virginia Slims, Winston, and Yves Saint-Laurent.

6. Tobacco control initiatives begun by the FSM government include prohibition of smoking in all national government buildings, prohibition of smoking on all airline flights, prohibition of tobacco sales to minors, prohibition on tobacco advertising, an increase in the excise tax levied on tobacco products, and anti-tobacco health promotion programs in the public schools. For further details on these initiatives, see Marshall (1997).

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