Fears of Illness Progression and the Production of Risk: Two Ethnographic Case Studies in Northeast Thailand

Jen Pylypa *Carleton University*

Abstract: This article considers common themes emerging from two ethnographic research projects in Northeast Thailand: one on women's reproductive health concerns, and another on children's fevers. Both projects revealed that illness experiences were substantially shaped by particular perceptions of risk—especially fears that a mild illness would progress to a fatal one—exacerbated by feelings of social vulnerability in clinical encounters. The analysis examines how experiences of risk were constructed in the context of multiple, intersecting forces, ranging from "ethnomedical" perceptions to the impact of health education and prevention programs, pharmaceutical marketing, and social inequalities between patients and health providers.

Keywords: health services, Thailand, women, children, cervical cancer, fruit fever

Résumé : Cet article étudie des thématiques communes ayant surgi de deux projets de recherche ethnographique dans le nord-est de la Thaïlande : un sur des enjeux de santé de la reproduction chez des femmes et un autre sur les fièvres chez les enfants. Les deux projets ont révélé que l'expérience de la maladie était significativement déterminée par des perceptions particulières du risque – en particulier par des craintes qu'une maladie bénigne n'évolue vers une maladie fatale – exacerbées par des sentiments de vulnérabilité sociale lors de rencontres cliniques. L'analyse examine comment les expériences du risque ont été construites dans le contexte de multiples forces croisées, allant de perceptions « ethnomédicales » jusqu'à l'impact des programmes de prévention et d'éducation à la santé, du marketing pharmaceutique et des inégalités sociales entre les patients et les intervenants en matière de santé.

Mots-clés : services de santé, Thaïlande, femmes, enfants, cancer du col de l'utérus, fièvres des fruits

Introduction

Medical anthropologists, especially those working on applied public health projects, are commonly charged with investigating the cultural determinants of health behaviours. One problem with the idea of "cultural" or "ethnomedical" explanations for people's responses to illness is that it reifies "culture" as explanatory in and of itself (Fassin 2001; Janes 2006). Another problem is that the idea of "cultural determinants" still evokes images of purely "local," "indigenous," or "traditional" ideas—despite the progression in anthropology over the past three decades toward more complex understandings of how local experience is historically-situated and globally-influenced (Wolf 1982) and how cultural meanings are in a constant state of construction and transformation within the context of historical and global change (Ortner 1999). "Cultural" perceptions of illness may indeed be derived in part from indigenous ideas that have deep-seated roots. But these cannot be extracted from the broader global influences of (1) changing international public health agendas and their national and local manifestations in disease prevention programs and public health education, (2) the interactions of local people with health care providers trained in global biomedicine, and (3) the influences of other producers of medical knowledge, including the media as well as profit-oriented pharmaceutical companies and medicine vendors who produce both knowledge and medicinal products consumed at the local level.

Anthropologists working in public health have also been criticized for over-emphasizing static, apolitical cultural explanations at the expense of considering political-economic forces that impact and constrain people's health behaviour, such as the availability of affordable health care and transportation, and oppressive power relations in clinical settings (Farmer 1999; Fassin 2001). These critiques are important; it is equally important to avoid a false dichotomy between "culture" and "political-economy," and endeavour to engage in micro-level analyses that deconstruct the complex interrelations of forces that affect health behaviour and patient-provider interactions. Similarly, experiences of risk and feelings of vulnerability to illness, and their consequences for health behaviour and psychological well-being, are constructed through the interactions of diverse influences that cannot be neatly distinguished as either cultural or political-economic. Rather, they are formed through the constant interaction of citizens, biomedical health providers, community-based healers, health education materials and prevention campaigns, media accounts and other exposures to representations of risk, medicine vendors and marketing strategies, and the social inequalities and political-economic contexts that frame these interactions. An analysis of risk perceptions and experiences, therefore, requires attention to a nuanced understanding of how these are formed and reformed through the interactions of these various factors, while resisting tidy distinctions between the cultural and the political-economic, the local and the global, the traditional and the modern. Although this article is about experiences of risk to illness, the lessons of such a nuanced understanding of the ways ideas are socially constructed under diverse influences are applicable to anthropology as a whole.

In this article, I provide two empirical examples of the ways perceptions of risk and people's responses to them were constructed in the context of such multiple, complex and interacting influences. I argue that a synthetic approach that takes into account local ideas about risk, the influence of health education programs and pharmaceutical companies on those perceptions, and the impact of social inequalities on clinical interactions is necessary to understand people's responses to illness and fears about risk. The first project discussed here, conducted in 1997, was a team ethnographic research project used to guide subsequent clinical interventions to improve women's reproductive health services in Northeast Thailand. Our research revealed that women feared that a broad range of reproductively-associated health problems, if left untreated, would inevitably transform into cervical cancer (*maleng pak mot luk*). Yet these fears were not derived from purely "ethnomedical" perceptions of illness transformation; rather, they were reinforced and perpetuated by a health education campaign that emphasized cervical cancer prevalence and changed women's perceptions of reproductive symptoms, and by the marketing campaign of a pharmaceutical company that targetted drug advertising at popular concerns. Social inequalities in health care settings led to a sense of social vulnerability for patients and clinical miscommunication reinforced, rather than alleviated, concerns about cervical cancer risk.

The second project, conducted in 2000-01, was an ethnography of children's acute infectious diseases, carried out in the same region of Thailand. Community members were found to be particularly concerned about an illness known locally as "fruit fever" (*khai mak mai*), typically characterized by fever and rash. People feared using formal health services to treat fevers suspected to be khai mak mai, since common biomedical treatments were believed to dramatically increase the risk of death. Because khai mak mai was not a biomedically recognized disease, patients felt their concerns were ignored by health providers and felt powerless in clinical encounters, exacerbating their sense of vulnerability and fear that biomedical treatment was a risky proposition. People therefore avoided biomedical care and employed both traditional, herbal medicine and commercial herbal products that targetted laypeople's concerns about fever and rash. A recent public health campaign emphasizing the dangers of dengue fever—an illness believed to have very similar symptoms to khai mak mai—further exacerbated people's sense of vulnerability, since the two illnesses were considered difficult to distinguish, yet surviving them required opposing treatment strategies. Dengue was perceived to carry a high risk of death without biomedical care, while for khai mak mai, biomedical care was associated with treatment risks that would likely prove fatal.

Experiences of Risk and Social Vulnerability

Past research on risk perceptions has drawn on the insights of economics, psychology, sociology and anthropology. Economic theory has encouraged rational choice models that examine how people apply a cost-benefit approach to assessing and responding to risk (see Janz and Becker 1984), while psychometric approaches emphasize the individual and subjective nature of risk perceptions as influenced by factors such as knowledge, familiarity, attitudes and emotions (see Sjoberg 2000; Slovic 2000). Sociologists have examined changing notions of risk, specifically within the context of modernity (see Beck 1992; Giddens 1999), while anthropologists have used cultural theory models to posit a shared cultural construction of risk perceptions (see Douglas and Wildavsky 1982; Wildavsky and Dake 1990). While the cultural construction of risk is clearly an area relevant for anthropological investigation, Boholm (2003) argues that in most risk research, "culture" has been treated as comprising a taken-for-granted set of culture-specific perceptions that are assumed to be unproblematically deterministic of perceived risk, without dissecting the nature of the relationship between culture and experiences of risk.

More recently, social scientists have become interested in "risk subjectivities" (Lupton 1999), that is, how risk knowledges are constructed in the context of daily life. Boholm (2003) asserts that anthropology's principal contribution to risk research should be to employ our ethnographic sensibilities in order to place experiences of risk in the context of how they are understood in social settings—what she refers to as "situated risk." She emphasizes that ideas about risk are co-constructed through the interface of "experience-near" and "experience-far" (Geertz 1983) modes of risk knowledge, the former encompassing everyday personal experience as well as knowledge disseminated through local small talk, while the latter includes risk discourse produced by scientists as well as collective narratives about events (for example, disasters and epidemics), both of which are predominantly communicated to the public via the media (Briggs 2003; Clarke and Everest 2006; Eichelberger 2007). With regard to health risks, I would add that they are also communicated through various means of public health education—from educational programs in schools, to widespread community-based health education and disease prevention campaigns.

In the category of experience-near modes of health risk knowledge, we might include historically-embedded ethnomedical ideas about body functioning, illness processes and progression, and vulnerability, as they are experienced locally through the bodies of self, friends and family. For example, Nichter (2008) discusses culturally-specific notions of vulnerability in which people may feel susceptible to illness because of cultural concerns that may include ideas about the effects of bodily states such as pregnancy or overwork, cumulative impurities or germs, or exposure to dangerous spaces (for example, where spirits live) and environments (for example, hospitals). While it is tempting for anthropologists working in non-Western, developing-country settings to focus on the significance of such cultural dimensions of risk knowledge, these must also be placed in the context of how they interact with, and are informed by, experience-far risk discourse. At the intersection of experience-near and experience-far sources of risk knowledge are lay evaluations and interpretations of expert knowledge (itself culturally constructed) as filtered through the media, health education, drug marketing campaigns and interactions with health providers, which are assessed in light of local experience and talk about illness.

Media accounts may emphasize risk for its audience impact, contributing to an expanded sense of risk (Woloshin and Schwartz 2006); public health education also contributes to perceptions of risk and feelings of vulnerability since it often overtly aims to cultivate fear of risk through health warnings aimed at instituting behaviour change or encouraging health surveillance and health care seeking. This fear-inducing strategy can, however, have unintended and iatrogenic effects (Guttman and Salmon 2004). Medical surveillance, diagnostic tests, and screening programs can also induce a state of feeling at risk, creating a sense of personal vulnerability for the patient rather than alleviating fears (Gifford 1986; Hunt and de Voogd 2003; Scott et al. 2005). People's sense of vulnerability is also influenced by interactions with health care providers and the ways they communicate risk, as well as the actions of pharmaceutical companies that use fear to encourage people to see themselves as potentially ill and to "ask their doctor" about a particular drug, or that encourage associations between particular medications and laypeople's anxieties or even the normal range of everyday experiences (Conrad 2007; Moynihan and Cassels 2005). While researchers have indeed considered how "macro" level forces such as the media and pharmaceutical advertising are implicated in producing and reproducing health-related risk perceptions, the focus of such studies tends to be on urban, industrial, Western societies. Most health risk perception studies take place in the developed world (Hawkes and Rowe 2008), with perhaps the exception of studies of perceptions of risk to HIV/AIDS (Smith 2003). Those that look at rural, developing country settings often emphasize indigenous, cultural risk perceptions (Chapman 2003) rather than how these are impacted by experience-far discourses on risk. Especially absent from studies in such settings is a consideration of the role of pharmaceutical companies and medicine vendors as producers of risk knowledge (Radyowijati and Haak 2003).

Response to perceived risk, that is, how people "manage" risk (including the use of medical care), must also be placed in social and political-economic contexts. Individuals must balance health risks with other concerns such as the financial or opportunity costs of seeking health care, risks associated with treatment, or fulfilling other life priorities and needs (Kaufert and O'Neil 1993). Others have written about how social risk (risk of social stigma, risk to identity or risk of damaging social relations) may impede health care seeking or prevention behaviours—such as when people resist a stigmatized illness label and associated treatment, or refrain from condom use with spouses for fear of damaging marital relations (Bujra 2000; Nichter 2008). Clinical encounters themselves expose people to social vulnerabilities that may influence the ways they manage health risks. Within medical anthropology, focus has been placed on cultural competency among biomedical practitioners and the importance of promoting negotiation models of patient-provider interactions (Berlin and Fowkes 1998; Kleinman 1979), while others have considered the role of the degree of trust in those responsible for managing a risk (in this case, health providers) and its impact on how people perceive and respond to risk (Boholm 2003). In settings where the patient population is marginalized on the basis of gender, ethnicity, or socioeconomic status, it is also important to consider their social vulnerability and how this vulnerability compounds risk to illness or impedes use of medical care (Berry 2008). Social inequalities between patients and health providers can render the former powerless to voice their health concerns for fear that providers will not understand or will dismiss their fears. In such cases, clinical encounters carry both a social risk of exacerbating feelings of marginality and an associated physical risk that one's illness will be inadequately treated, or even, iatrogenically mistreated. Social vulnerability may be a contributor to heightened risk of illness progression or complications in and of itself, in some cases resulting in patient risk reduction strategies that explicitly involve avoiding biomedical treatment as we shall see in the second case study.

In each of the two case studies that follow, I begin by examining what might be described as a local, "cultural" risk concept that guides people's thinking about the risk associated with a particular illness. While there is no single translation of the English term *risk* in the regional Lao dialect (or in Thai) and people did not speak in terms of a broad notion of risk, they did speak about risk in terms of particular local concepts relevant to the health concerns in question. In the case of women's reproductive health concerns, the key risk concept was the idea of illness transformation (into cervical cancer); in the case of "fruit fever," the key concern was the concept of incompatibility (*phit*) of certain substances with the illness which could render a mild illness episode fatal. After considering the significance of these local risk concepts, I move beyond a purely ethnomedical assessment to examine how ideas about risk are reinforced, transformed, and evaluated in light of the interaction of experience-near and experience-far modes of risk knowledge, including knowledge produced or disseminated by health education campaigns, drug companies and vendors, and health providers. Finally, I consider how social vulnerability in clinical settings affects risk perceptions and management, and revisit the roles of cultural competency and trust as they affect the successes or failures of the health care system in helping people manage perceived risk.

Setting and Methods

Both research projects were carried out in Northeast Thailand, a region of 21 million people comprised primarily of ethnic Lao (*Isan*) people with strong historical ties to the people of neighbouring lowland Laos. The Northeast is the poorest region in Thailand with the highest rates of child malnutrition; the region's relatively poor health indicators are exacerbated by having the nation's lowest per capita number of doctors, nurses and hospital beds. Rural-urban disparities in wealth and health care provision make such problems more pronounced in rural areas (UNICEF 2005). Rural Isan villagers subsist on rice farming, fishing and foraging, animal husbandry, some limited cash cropping, women's cottage industries such as weaving cloth or baskets, and sporadic wage labour as well as out-migration to Central and Southern Thailand for work. Given inadequate local income-earning opportunities, remittances from out-migrating family members have become increasingly important to the local economy, although the degree of out-migration varies from village to village; some villages are populated largely by the elderly and their grandchildren with young people off working in Bangkok or other provinces year-round, while in other villages out-migration is less prominent or more seasonal.

The government public health service provides the largest proportion of formal health services in Thailand. Health services accessibility is aided by a national health card system that provides free or low-cost care at government facilities. At the time of the majority of the research discussed here, only 70% of the Thai population was covered under the existing health card schemes; however, in 2001 (during the latter half of the second project) the government introduced a new universal health card program which provides treatment at government facilities for a co-payment of 30 baht (US$0.90) per illness episode (Suraratdecha et al. 2005; Tangcharoensathien et al. 2004; Towse et al. 2004). Most rural people have access to transportation by bus or motor scooter for travel to government health facilities.

Government health services include subdistrict-level health posts run by nurses, midwives, and community health workers that each serve a cluster of nearby villages (with one post within a few kilometres of each village), one community hospital in each district centre, and provincial and regional hospitals in large cities. Health posts are conveniently located but have no physicians, and limited medications and hours of operation, such that for serious concerns people commonly bypass them in favour of the district hospital. The latter is better equipped, although wait times are long; in the location of the second study described here, the district hospital employed only three physicians for a population of over 70,000. Private clinics supplement government services and are sometimes preferred due to their speed of service, reputation for quality medications, and extended hours of service. Use of government services has, however, been high despite competition from private providers and the lack of universality of the government health card schemes prior to 2001. In our women's health project (1997), we found that 73% of women surveyed (n=1028) had visited a government facility at least once in the preceding year. Although these services are used frequently, the sense of marginality experienced by rural, Lao-speaking, Isan people is nevertheless reflected in uneasy relations with higher-status, and sometimes ethnically Central Thai, health providers.

Formal health services are complemented by various sources of medications and other community-level resources. Small village shops and travelling medicine vendors sell medications ranging from herbal medicines to antibiotics. Like village shops, pharmacies in the district centres (within 20 kilometres of most villages) sell many prescription medications without demanding a physician's prescription and pharmacy attendants (who may be untrained relatives of the pharmacist-owners) are commonly consulted for treatment advice. Self-medication with pharmaceuticals, such as antibiotics, is commonplace. Although diminishing in importance over time, traditional healers also provide village-level services at very low cost and fill the need for treatment rooted in non-biomedical illness models. These practitioners include spirit experts (*mo phi* or *mo tham*) who diagnose and treat sorcery and spirit-related afflictions, blowing experts (*mo pao*) who treat aches and pains, animal bites, stings and broken bones, and herbalists (*mo ya phuen ban*), who use teas made from roots, herbs, bones and shells to treat various conditions (including "fruit fever"). Elders also self-treat their families with herbal medicines and informal village injectionists may administer injections within the community. Finally, formal village health volunteers serve as liaisons between the health care system and rural villages; their roles include health and growth monitoring of children, assistance in vaccination programs, dissemination of health information and disease prevention activities.

In the women's health project, our team of Thai and North American researchers conducted ethnographic research on reproductive health concerns over six months in 1997 (with ongoing health interventions beginning in 1998), across three districts of Khon Kaen Province. The study focused on women's experiences of symptoms they associated with the uterus (*mot luk*) and related health concerns and health care seeking. At the community level, we conducted a quantitative survey of 1028 women of reproductive age on self-reported prevalence of health problems, self-medication and health services use. Qualitative research included intensive ethnographic research with over 100 women using structured and semi-structured interviews, focus groups and participant-observation, focusing on health concerns, ethnogynecology, the language of illness, theories of illness causation and self-care practices, including detailed case histories of 50 women self-reporting chronic or recurrent "uterus problems." Research in ten village stores and ten pharmacies revealed what medications were available, recommended by merchants and used in self-medication. At the level of health services, we consulted staff at 15 health posts, as well as six private practitioners and 20 village health volunteers, and conducted patient flow analysis and exit interviews with 25 women at three district hospitals and three urban clinics and hospitals to learn about their health concerns and service expectations (see also Boonmongkon et al. 1999, 2001, 2002).

The second project aimed to examine how families made sense of ambiguous symptoms accompanying children's acute febrile illnesses and their associated prevention and health care seeking behaviours. Ethnographic research took place over a 13-month period in 2000-01, focusing on three rural villages in one district of Ubon Ratchathani Province. Following a survey of household demographics, subsistence and health (45 households across 3 villages), I conducted over 200 in-depth, open-ended interviews in the local Isan dialect, primarily with mothers of young children. Interview topics included illness histories, ideas about specific infectious diseases and local illness categories (malaria, dengue fever, diarrheal disease, acute respiratory infections and "fruit fever"), health care seeking for children's illnesses, the nature of fever and the seasonality of illness, and a comparison of the severity and prevalence of different illnesses. Of particular relevance to the current discussion were 97 interviews with community members, traditional healers and health services staff that involved substantial discussion of the local illness category khai mak mai ("fruit fever"). These included 49 interviews that focused exclusively on khai mak mai, including five with village herbalists who treated the illness and 44 with other community members. Six village shops were surveyed to determine what medicines were available and requested in communities without a prescription, and ten interviews were conducted with community health workers, nurses and physicians at health posts, private clinics and the district hospital.

During the ten months in which I resided in one of the rural study villages, participant-observation as well as consultation with village health volunteers and community-level health providers served as important complements to formal data collection (see also Pylypa 2004, 2007).

"Uterus Problems" and the Risk of Illness Transformation

In our women's health project, we examined women's conceptions of both reproductive tract infections and other symptoms locally associated with the uterus (mot luk). Women described "uterus problems" as encompassing a variety of symptoms such as vaginal discharge, itching, odour and rash, as well abdominal and lower back pain associated with the labour of rice farming and the repetitive movements of weaving cloth on large looms. Causes women linked to uterus problems included hard work, poor hygiene or dirt from the environment, and sexually transmitted infections. Additionally, women felt vulnerable to developing a uterus problem if they had experienced a predisposing event earlier in life, such as a childhood injury, a problem during a past pregnancy or abortion, pushing too hard during childbirth, sterilization, or failing to follow the traditional practice of "staying by the fire" for several days following childbirth. Other factors that might make one vulnerable included such things as contraceptive use, heredity, consuming certain foods, stress or strong emotions.

Given the broad range of symptoms and causes women associated with uterus problems, it was not surprising that they were reported to be common, with 70% of women of reproductive age (20-59) surveyed (n=1028) reporting experiencing one or more such problems in the past two years, in many cases on a chronic or recurrent basis (Boonmongkon et al. 1999). In-depth interviews with 50 women who had chronic or recurrent symptoms revealed that while immediate symptoms caused discomfort, their overwhelming concern was that their problems would ultimately "change into" (*kai pen*) cervical cancer (maleng pak mot luk), even if symptoms were mild. Thus, the key risk concept which dominated the minds of those suffering symptoms was the risk of illness transformation from an annoying condition to a deadly disease that was viewed as incurable, invariably fatal and highly stigmatized. When asked how their uterus problems affected their lives, many women spontaneously mentioned a fear of cancer and death. Their comments indicated a substantial psychological burden resulting from fear of cancer, which manifested as insomnia, worry about chronic illness and death, and concern over who would take care of children or grandchildren when chronic illness prevented women from fulfilling family obligations.

To understand this overwhelming fear of illness transformation and death, even in the face of relatively mild symptoms, we need to examine local ideas about the nature of "uterus problems." Problems with various causes were perceived to cause a large ulcer, fungus or collection of pus inside the uterus; as untreated problems became more severe, they could progress to cervical cancer, envisioned as the most advanced, life-threatening stage in the development of this uterine anomaly. Thus, hard work might lead to an infected uterus that would become a tumour that would become cancer; a sexually transmitted infection might develop into a uterine ulcer that would become cancer. Whereas biomedicine recognizes infection with the human papillomavirus (HPV) as a risk factor for developing cervical cancer, women perceived a much broader range of causes and conditions that might transform into cervical cancer, including various infections as well as abdominal pain, a "bad uterus" caused by an earlier life event (for example, sterilization or injury), vaginal discharge, poor hygiene, hard work or use of contraceptives. Thus, women with recurrent symptoms identified a combination of wide-ranging types of vulnerabilities and physical insults that put them at risk to a common type of uterine injury that would ultimately advance to cervical cancer.

Health Education and the Reinforcement of Risk

Fears of cervical cancer among women with a broad range of pains and other symptoms cannot, however, be explained by "cultural" conceptions of risk and illness transformation in isolation. These concerns must be placed in the context of various macro-level forces and their local manifestations that have influenced local experiences of risk to cervical cancer. One of the experience-far sources of risk knowledge has been the introduction of cervical cancer education and screening. Conducting Papanicolaou (Pap) smears at regular intervals on adult women has become the global gold standard for the early detection of cervical dysplasia, which may develop into cervical cancer. Beginning in the 1980s, Khon Kaen Province initiated one of the most aggressive cervical cancer screening campaigns in Thailand and women were encouraged to get a Pap smear once a year. The campaign emphasized the danger of cervical cancer with little information provided on actual incidence, the meaning of Pap smear results or what conditions actually lead to cervical cancer. The latter is particularly important given the concerns about illness transformation described above. We observed large educational posters displayed at health posts that graphically depicted a magnified image of advanced cervical cancer but without any explanation provided. This image—easily interpreted as a macroscopic photo of the inside of the uterus rather than a microscopic image—was remarkably consistent with local perceptions of advanced uterus problems, imagined as a large ulcer, fungus or collection of pus in the uterus, thus helping to reinforce local ideas that linked uterus problems and cervical cancer. Such images helped to fuse the experience-near (ethnomedical) and experience-far (health education) sources of risk knowledge into a coherent whole.

In-depth interviews with women experiencing recurrent symptoms revealed the impact of the education campaign and the extent of its consequences for women's embodied sense of risk. One woman commented that while her symptoms were minor, she still worried about them turning into cancer "because they did a health education campaign." Another said that from the health education messages dispersed over the village loudspeaker, she learned how common cervical cancer is and it made her so afraid of cancer that she suffered from insomnia and had requested sleeping pills from the health post. The shift over time in perceived risk experienced by women as a result of changing public health agendas was particularly evident in the statement of one woman who explained, "Years ago people did not know about cervical cancer. Women had [vaginal] discharge and thought they had syphilis or gonorrhoea. Now, we think cancer."

Twenty focused interviews on perceived risk revealed that women expected 9-16% of women over age 25 in their communities to develop cervical cancer, a number higher than the 6-11% expected to develop AIDS (which has also received extensive health education attention in Thailand), and in stark contrast to the estimated, national annual incidence of 28 cases per 100,000 women. Although it is difficult for laypeople to estimate disease rates and their specific estimates are not expected to be accurate, these findings—when combined with our qualitative interviews—indicate that women perceived a level of risk to cervical cancer that was disproportionate to epidemiological estimates of risk. Thus, in addition to experience-near concerns about vulnerabilities relating to one's own medical history, current health problems and life circumstances, exposure to health education and risk information created a sense of collective risk among the adult female population, resulting in an epidemic of fear surrounding cervical cancer.

Drug Marketing and the (Re)Production of Risk

Public health education was not, however, the only source of experience-far knowledge that affected local perceptions of uterus problems and cervical cancer. Pharmaceutical companies played a role in the production of medical knowledge as well. Forty of the 50 women interviewed who experienced recurrent symptoms reported self-medicating the last time they experienced symptoms and 34 of these women bought antibiotics, most often from village shops. Two popular brands of tetracycline (Kano and Hero®) were widely believed to be good for uterus problems in general (see also Whittaker 2000), despite the fact that tetracycline is medically inappropriate for many problems locally classified as uterus-related such as muscle pain; fungal infections can be made worse by antibiotics.

Yet, as with health education campaigns, broader forces influenced the "ethnomedical" perception that tetracycline was good for the uterus: poster and radio advertising by pharmaceutical companies explicitly encouraged this association. One poster advertisement for Kano featured linked male and female icons (implying STI treatment) and a picture of a uterus with an arrow pointing to it containing the word "uterus," with no other explanation provided. In an unregulated drug advertising and purchasing environment, this pharmaceutical company's direct-to-consumer advertising of tetracycline as a drug to be associated with the uterus and sexuality served to medicalize a particular organ as defective and in need of treatment, reinforce local ethnomedical perceptions of the uterus as an organ at risk to disease, and employ ambiguity (in the absence of an explanation for the images provided) specifically to (re)produce a sense of risk associated with the uterus.

This experience-far production of risk knowledge by drug companies is brought closer to the experience-near context of village life by the marketing strategies of informal medicine vendors. During the children's febrile illness project, conducted in a different province of Northeast Thailand, I observed travelling medicine vendors who visited villages, attracted a crowd by showing movies outdoors in large public spaces, and then sold medicines during intermission. One vendor marketed an herbal tonic to women as a medicine to treat various uterus problems; he stated that among other things, it would treat vaginal discharge, and "prevent it from becoming cervical cancer, because if white discharge doesn't go away you can get cervical cancer and then the doctor can't cure you." Thus, associations between uterus problems, cervical cancer, and unregulated, widely-available medications ranging from herbal tonics to antibiotics were encouraged by both formal and informal marketers of medicines. The explicit association of "uterus medicines" and cervical cancer prevention made by informal medicine vendors further reinforced a similar association between tetracycline—also marketed as a "uterus medicine" through visual imagery in the poster described previously—and the prevention of cervical cancer.

Health Services Failures and the Effects of Social Vulnerability

In addition to health education and drug marketing, it is important to consider the impact of women's interactions with the health care system as a source of knowledge production and experiences of risk. Of the 50 women with chronic or recurrent symptoms interviewed, 23 had visited a district hospital the last time they experienced symptoms. During observations at two district hospitals, we found that women presenting with symptoms commonly requested an "internal exam" and were then redirected to the hospital's health promotion clinic for a Pap smear. This was problematic, however, because women conceived of a Pap smear as a diagnostic procedure for all uterus problems (the worst manifestation of which was cancer), rather than as a screening procedure specifically for precursors of cervical cancer. Survey data (n=1028) confirmed this perception, revealing that 42% of those who had received a Pap smear within the past two years sought out the service because they were experiencing abnormal symptoms (with most others recruited by health personnel), while 50% of those who had not had a Pap smear in the past two years gave "no abnormal symptoms" as their primary reason for not doing so. The fact that symptomatic women seeking treatment for uterus problems were redirected to the Pap smear clinic for cervical cancer screening further reinforced the association women made between all uterus problems and cancer; health staff thus inadvertently helped to (re)produce this "ethnomedical" risk knowledge.

Symptomatic women who were sent to the hospital's Pap smear clinic expected treatment for their symptoms in addition to cancer screening; in contrast, hospital staff were commonly unaware that they were symptomatic and only conducted routine screening without treating symptoms unless they were obvious and severe. Since women conceived of advanced uterus problems and cervical cancer as a large ulcer, fungus or accumulation of pus in the uterus, they expected these to be diagnosed upon visual inspection during an internal exam. Women who were not treated assumed that the exam failed to reveal their problem or that the hospital was ineffective. Communication between patients and staff was minimal; patients did not volunteer much information about their symptoms and staff did not invite questions. Patients experienced a sense of social vulnerability in clinical encounters, where they felt they lacked a voice to express their concerns and feared reproach. Exit interviews at the district hospitals revealed that women wished to ask questions about their symptoms but dared not for fear of angering busy staff (see Whittaker 1996). Furthermore, the sensitive nature of reproductive tract symptoms and the sense of exposure associated with a pelvic exam only increased the sense of social vulnerability in these clinical interactions. The result of these encounters was that symptomatic women's perception of embodied risk to cancer was left unchanged, while expectations for diagnosis and treatment were not met, resulting in worry, dissatisfaction and a lack of effective treatment.

In sum, the women we interviewed—especially those with ongoing or recurrent symptoms—experienced an embodied sense of risk that a wide range of abdominal and reproductive tract ailments would damage their uterus and, ultimately, advance to cervical cancer. Yet their perceptions were not purely "local" or "cultural" in origin; rather, they were encouraged by both a well-meaning cervical cancer screening campaign that heightened awareness but also women's sense of risk to cervical cancer, and more ominous drug marketing practices that encouraged associations between tetracycline or other medicines, the uterus, sexually-transmitted infections, symptoms commonly experienced by women and cervical cancer. When combined, these forces created a semantic network (Good 1977) in which there was a strong association linking cervical cancer with a wide range of causes, various abdominal and reproductive tract symptoms, the uterus, tetracycline, and Pap smear clinics, as well as images of decay, stigma and death. These associations led women not only to self-medicate with antibiotics, but also to seek care from a health care system where lack of communication—encouraged by the social vulnerability experienced by marginalized people in face of intimidating clinical encounters—reinforced local risk perceptions of the relationship between uterus problems and cancer and led to a substitution of cervical cancer screening for treatment of symptoms. This led, ultimately, to treatment failure, health care dissatisfaction, and ongoing patient anxiety that their milder health problems would advance to a fatal disease.

"Fruit Fever" and the Risk of Incompatibility

The second study focused on children's acute febrile illnesses, examining how families made sense of ambiguous symptoms (for example, fever, rash and respiratory symptoms) and chose a particular course of treatment given a variety of traditional and biomedical health care resources from which to choose. It was in this context that the local illness category khai mak mai ("fruit fever") emerged as a significant concern. In a household survey of lifetime family illness histories (n=44), 20 mothers (45%) self-reported at least one case of khai mak mai in their families. Khai mak mai was considered to affect all age groups, and was commonly raised as a concern during interviews on a variety of illness topics.

Khai mak mai was described as a non-contagious disease of unknown origin, characterized by fever and rash as well as an uncomfortable internal sensation referred to as "internal heat" (*hon nai*) and associated thirst. A wide variety of other possible symptoms were suggested by different informants (for example, lethargy, body pains, respiratory symptoms, etc.) such that the illness was potentially highly variable in symptom presentation. People acknowledged that a khai mak mai diagnosis could be difficult to determine, especially given that the defining rash could vary widely in appearance, take several days to emerge following the onset of illness, or be hidden or "trapped" inside the body. Diagnosis was sometimes posthumous, with an illness assumed to have been khai mak mai if the rash "came out" of the body after death in the form of skin discolorations. Diagnosis was also complicated by the fact that many people viewed khai mak mai as an illness complex that could have multiple subtypes each with different symptoms, and some more severe than others. For some people, khai mak mai (or one of its subtypes) was the same thing as a biomedically-recognized disease (variously described by different people as chicken pox, typhoid fever, measles, German measles or dengue fever), while for others khai mak mai was an illness different from all of these. Khai mak mai was not recognized by biomedical practitioners and the great diversity of symptoms, subcategories, and circumstances described by different informants made it possible for many biomedically-recognized diseases—such as pneumonia, malaria, dengue fever, chicken pox and measles—to potentially be classified as khai mak mai by laypeople (see Pylypa 2007).

Khai mak mai carried a high risk of death, not because of the severity of the illness itself, but because consumption of certain foods and medicines while sick could cause an otherwise mild or moderate illness to suddenly progress to a fatal one. The key local risk concept of relevance was the idea of phit (wrong, incompatible) substances. This ethnomedical concept translates across different illness and bodily states; for example, certain foods are considered phit for a woman following childbirth (Whittaker 2000). Substances universally perceived as incompatible with khai mak mai included all fruits, injectable medications and intravenous (IV) solutions. Injections were said to be so invariably and rapidly fatal that the patient would die "before the needle even came out." Illness narratives were replete with references to people who had undiagnosed (or misdiagnosed) fevers and consumed fruit or injected medications without knowing that the illness was khai mak mai, then subsequently became gravely ill or died. Common stories of khai mak mai deaths—especially following the administration of IV solution by hospital staff—included known cases among relatives of informants as well as vague rumours and cautionary tales about cases of fatal illness mismanagement. Fears about the risk of consuming incompatible substances and its fatal consequences were important considerations in how all fevers of unknown origin were managed.

Herbal Medicine and Targetted Commercial Herbal Products

Herbal medicine was considered the only appropriate treatment for khai mak mai, often administered by elders or by traditional herbalists who could also diagnose the illness. However, difficulties distinguishing one type of fever from another made actual treatment patterns far more complex in practice. Home diagnosis was often situational; a fever might be tentatively diagnosed as khai mak mai if it occurred during "fruit season" (when khai mak mai was perceived to be more common), if it did not respond to biomedical treatment, or if the patient's condition deteriorated following consumption of fruit. Diagnoses could change over time as symptoms emerged and as various treatments—both herbal and biomedical—were tried and tested. Resort to herbalists might encourage a khai mak mai diagnosis given their expertise in this area as well as their ability to identify a variety of khai mak mai subtypes even in the absence of a visible rash. The ambiguity surrounding diagnosis informed risk management strategies: some families consulted a herbalist as a first resort for febrile illness in general, to check "just in case" it was khai mak mai before resorting to health services where IV and injection use risked exacerbating the illness; others waited several days to see if a rash would emerge before seeking medical care.

Commercial herbal medications—most notably the brand Ya Khiao Tra Bai Pho®—were also available in village shops, and, as with tetracycline in the previous case study, appeared to be carefully marketed at local illness concerns. Although the medication packaging did not mention khai mak mai explicitly, the indications listed on the package were those strongly associated with khai mak mai, and included fever, "internal heat," and thirst, as well as German measles and chicken pox, both common diseases characterized by fever and rash that were often equated with particular subtypes of khai mak mai. As in the previous case study, medicine manufacturers targeted commercial products at local concerns in a way that reinforced a semantic network of associations that included herbal medicine, fever, "internal heat," thirst, biomedically recognized febrile illnesses characterized by rash, and by extension, khai mak mai—a local illness complex linked to all of these. Thus, despite a lack of acknowledgement of khai mak mai as a legitimate disease category within biomedicine, an authority beyond the community level—in the form of a commercial medication manufacturer—reinforced the association between herbal treatment and symptoms characteristic of khai mak mai. In so doing, this company helped to link the experience-far knowledge associated with commercial research and production with experience-near conceptions of fever, as well as local risk management—since herbal treatment as a first resort for unknown fevers, especially those with rash, was an important harm reduction strategy designed to mitigate the risk of fatal mismanagement of khai mak mai in hospitals.

Health Services and Social Vulnerability in Clinical Settings

Because injections and IV solution were commonly given in hospitals where health providers were almost universally perceived to be ignorant of khai mak mai, people reported that they "didn't dare go to the doctor" if khai mak mai was suspected. However, given diagnostic difficulties, many cases later concluded to be khai mak mai were, nevertheless, at some point treated by biomedical health providers. These encounters were almost always described in negative terms. As with the previous case study, people's fears about the risk of fatal mismanagement of khai mak mai in hospitals need to be understood in the context of the quality and nature of their interactions within the public health care system—in particular their social vulnerability in hospital settings—as well as the ways in which they balanced multiple types of perceived risk, and how notions of risk were affected by health education messages.

Informants reported that when patients were treated in the hospital with injections or IV solution and died, the hospital staff failed to recognize that incompatibility of these substances with khai mak mai was the cause of death. They also told stories of cases where patients resisted biomedical treatment when incompatibility with IV solution was suspected, sometimes by surreptitiously closing off IV tubes or removing them and fleeing the hospital when staff were not looking. People reported that when they raised concerns about the risks of fruit, injections or IV solution with health providers, their concerns were not taken seriously; they were told "You can eat anything!" or "IV solution isn't incompatible with any illness," responses they found to be dismissive. More broadly, people complained of maltreatment at the hands of an unsympathetic health care system, and exhibited a guarded and shaky trust in the competence and motivations of health providers. They commonly condemned the rudeness of nurses and the poor service in hospitals, and felt powerless to question physicians. Interestingly, people tended not to place blame on physicians for mistreating khai mak mai, forgiving them because they lacked knowledge of the illness; rather, they were more concerned with health providers' moral failings—that is, their condescending or dismissive attitudes. As rural, less-educated, Isan people faced with higher class, urban, and sometimes ethnically Central Thai health providers, their broader sense of social marginalization framed these interactions.

By speaking not only of health providers' ignorance about khai mak mai, but also their dismissive attitudes and maltreatment of patients, people explicitly acknowledged the role of social vulnerability as a "risk factor" for illness progression. Patients commonly experience a lack of agency as non-experts to challenge expert notions of risk (Lupton 1999). This lack of agency leads to powerlessness to control the outcome of the clinical encounter, which in the case of *khai mak mai*, carried the risk of fatal mistreatment of the illness. Informants lamented that medical staff would not acknowledge the role of injections and IVs in causing khai mak mai deaths in the hospital, and spoke of being blamed for treatment delay when, in fact, a death was caused by hospital administration of IVs. Socially vulnerable and unable to assert their own conceptions of risk, patients and their families balanced different risk expertises available to them: biomedical expertise, the expertise of herbalists and the expertise derived from their own experiences with symptoms, illness and death. People frequently spoke of how "Isan people know" about khai mak mai, but health providers "don't understand," and suggested the need to rely on traditional expertise in balance with the benefits of biomedicine—in which people expressed great confidence for the treatment of many other illnesses. Encounters with health providers thus not only left intact existing perceptions of risk, but failed to engage patient fears that common biomedical treatments carried the risk of death, given the powerlessness of patients to challenge expert interpretations of risk.

Managing Competing Risks: Fruit Fever, Dengue Fever and the Role of Health Education

Despite the risks of biomedical care, people often felt they could not avoid the hospital entirely, even when khai mak mai was a possibility, because of the difficulty of diagnosing fevers of uncertain origin. While they challenged biomedical notions of risk in cases of khai mak mai, they also had to make difficult decisions about which experts to trust for a particular illness episode. One mother, whose son died following administration of an IV, had consulted a herbalist before taking her son to the hospital, but despite this precaution blamed herself for not consulting a second, more experienced herbalist first—believing this would have prevented her son's death. Yet most people trusted that biomedical care was essential for the treatment of other fevers that resembled khai mak mai, and given diagnostic uncertainty, thus faced a dilemma in deciding whether to seek biomedical care. Of particular concern was dengue fever (*khai lueat ok*), which was believed to be invariably fatal without hospitalization and the administration of intravenous solution. Informants frequently commented that the symptoms of dengue and khai mak mai were so similar that it was often difficult to tell them apart. Thus, patients faced with diagnostic uncertainty were confronted with a dilemma—should they risk going to the hospital (and dying of hospital mismanagement of khai mak mai) or should they risk staying home (and dying of untreated dengue)? They were faced with the need to balance competing risks.

As with the previous case study, it is important to place the dilemma over the treatment of khai mak mai versus dengue in the context of the impact of health education messages about risk. While there was no visible health education on fever in general nor any that addressed local concerns about fever and rash, dengue fever was widely targetted by prevention campaigns aimed at convincing communities to engage in source reduction of the *Aedes aegypti* mosquito population that spreads the disease (see Pylypa 2009). Throughout Northeast Thailand, large banners and posters warn of the dangers of dengue transmission, and schoolchildren and village health volunteers are mobilized to lead community source reduction activities. These campaigns focus on mosquito control messages, and provide no information on dengue symptoms, prevalence or mortality rates. Importantly, they make no distinction between mild dengue fever—which makes up the vast majority of dengue cases—and potentially fatal dengue hemorrhagic fever, which is rare but more dangerous. Rather, they emphasize the risk of death from dengue, using fear to mobilize participation in mosquito control; one large banner encouraging prevention measures stated that "if *Aedes* mosquitoes (*nyung lai*) bite you, you could die," and instructed people with fevers to "hurry to the doctor quickly!"

This portrayal of dengue risk is reflected in community risk perceptions. While health researchers in Thailand used the term *khai dengki* to refer to the milder and vastly more common form of the disease, community members were only aware of the term khai lueat ok ("bleeding fever") used in health education, which suggests the more severe form by referencing its often-fatal haemorrhaging. They had no conception of a mild form of dengue and considered all dengue cases to be fatal without hospital treatment. The experience-far knowledge of the risk of death from dengue, as promoted in health education, was then translated to the experience-near level through particular cases in the community in which children had been hospitalized and reportedly nearly died of dengue haemorrhagic fever. Since milder dengue cases went unrecognized as dengue (and were locally classified as other types of fever), these severe cases became the prototypes of the disease that informed perceptions of risk at the community level.

As with cervical cancer, the local conception of dengue risk cannot be separated from the notions of risk embedded in health education messages and how these are acted upon in light of other, community-based perceptions of risk. In the case of dengue fever, the fear of death from dengue—if not treated in the hospital with IV solution—was compounded by the opposing risk that khai mak mai would be mistaken for dengue and fatally mismanaged with an IV in the hospital. Risk perceptions associated with one illness do not exist in isolation from the concerns about risk to related illnesses, nor from the social vulnerability that prevents people from voicing their concerns about diagnostic uncertainty and fears of illness mismanagement. As noted by Chapman (2000:23), the management of risk necessarily involves the use of individual agency to assess competing risks, as people "weigh up the risks about which they are deluged with information against other risks present in their day-to-day lives which may receive much less publicity."

In sum, khai mak mai emerged as an important community concern—a common disease that biomedical practitioners were incapable of treating, but for which effective herbal treatment was available from elders or in the form of commercial herbal products that targetted local concerns. Yet the risk of this otherwise mild to moderate illness advancing to a fatal condition was perceived to be very real, given diagnostic difficulties which could lead to the consumption of an incompatible substance before a correct diagnosis was made. Since government health providers were generally believed to be ignorant of khai mak mai and were reputed to resort quickly to injections and especially intravenous solution, people avoided health services when khai mak mai was suspected as a risk-reduction strategy. The approach of avoiding health services—rather than discussing their concerns about injections and IVs with health staff—reflected social vulnerability in clinical settings where patients believed that their concerns would be ignored. This social vulnerability was understood as a risk factor that could result in iatrogenic illness mismanagement and death. However, diagnostic ambiguity and the perceived importance of biomedical care for other illnesses with similar symptoms (especially dengue fever, which health education encouraged people to believe carried a high risk of death) created a dilemma for families who had to balance multiple perceived risks which required different approaches to treatment. Since this dilemma ultimately resulted in many potential khai mak mai cases being treated at some point by formal health providers, families were faced with substantial anxieties that were not alleviated by medical staff who dismissed their concerns as unfounded.

Discussion

It is clear that in both case studies, community perceptions of risk and illness progression conflicted with biomedical ideas about risk, and this played a role in contributing to patient fears and inadequate communication at the clinical level. However, the "ethnomedical" explanatory models of illness and associated risk perceptions that patients brought to clinical encounters did not exist in timeless isolation from other "macro" influences that shaped them, including the impact of emerging health education and prevention campaigns, the effects of marketing by pharmaceutical companies and drug sellers, and social inequalities between patients and health providers trained in evidence-based biomedicine but with little training in social medicine.

The approaches taken in health education played a significant role in moulding the situation that led to patient fears and treatment failures in both case studies. During the febrile illness project, health education posters were visible in communities providing information on various infectious diseases (most prominently, dengue), but with no mention of local concerns about fevers and rash. Similarly, in the case of cervical cancer, the widespread health education campaign did not address local concerns about illness transformation. By building health education campaigns around "top-down" concerns with biomedically recognized diseases, rather than "bottom-up" community risk perceptions and concerns with particular symptom complexes, substantial local health concerns were left unaddressed in public health communication efforts. Furthermore, overzealous health education campaigns that attempted to use fear and risk discourse as a motivator contributed to worries about fatal illness transformation (in the case of cervical cancer) and the risk of fatal illness mismanagement (in the case of khai mak mai and dengue). The production of medical knowledge through health education thus co-constructed local perceptions of risk in combination with "ethnomedical" ideas about risk of illness progression, in ways that contributed to substantial patient anxieties about their health conditions as well as dilemmas surrounding risk management and treatment.

It is important to note that local concerns—even when they conflict with biomedical care as in the case of khai mak mai—may not necessarily prevent health services use, as people are pragmatic in their health care seeking behaviours and willing to experiment with different options. Rather, these concerns may have a greater impact when they are left unaddressed in the clinical space where patients feel marginalized, socially vulnerable and without a voice. Medical anthropologists have advocated for cultural competency training and negotiation approaches to clinical interaction, whereby health providers elicit, acknowledge and work with patient explanatory models of illness (Berlin and Fowkes 1998; Kleinman 1979). In the risk literature—which tends to focus on Western settings and places less emphasis on cultural difference—greater attention has been given to the role of trust and its impact on people's approach to risk management. Boholm (2003:171-172) asserts that "one way of coping is by means of high trust in those responsible for the management of the risk object or having strong faith in some other governing force or principle. But if trust is low or there is only weak faith, the remaining options are precaution or avoidance." In the case of khai mak mai, precaution (trying out herbal medicine for a few days before risking a trip to the hospital) and avoidance (of the hospital entirely) were common responses to risk, given the lack of trust in health providers.

In the febrile illness project, informants commonly expressed distrust of an alienating health care system, complained of poor communication skills and rudeness on the part of practitioners, and felt that health providers ignored their concerns about incompatible substances and khai mak mai. Yet, there was evidence that where efforts were made to overcome social inequalities between providers and patients and engender trust, conflicts between ethnomedical concerns and biomedical conceptions of risk could be overcome. One district hospital nurse who ran a very successful private after-hours clinic was described by community members as "the only health provider who knows about khai mak mai." An interview with her revealed that she possessed a thorough understanding of patient concerns about khai mak mai. Perhaps more importantly, she began the interview by emphasizing her egalitarian ethos, respect for patients, and willingness to engage their concerns in a way they found credible. She achieved this credibility by acknowledging concerns about fruit and supporting reasonable dietary restrictions, by acknowledging the potential dangers of IVs (for example, infection due to lack of sterility), and by discussing precautions she took to ensure their safe use—a response that was sufficient to satisfy patients (Pylypa 2007). Cultural competency and knowledge of patient concerns was a necessary but insufficient condition for her success; respect for patients across a power imbalance and social divide and the ability to engender trust, were equally essential.

Finally, it is noteworthy that in both of these case studies, drug companies and medicine vendors promoted medications in ways that specifically catered to and reinforced local ideas about illness and risk. In the West, researchers have discussed how drug companies produce knowledge that contributes to the medicalization of social problems and everyday embodied states. One means by which they do so is through direct-to-consumer (DTC) advertising (legal to varying degrees in different countries), whereby people are encouraged to self-diagnose and then "ask their doctor" if a particular drug is right for them. DTC advertising serves to expand the number of people who see themselves as at risk or in need of treatment, often by reframing common human characteristics and experiences as pathological (for example, shyness or occasional erectile dysfunction), and frequently employing clinical ambiguity to encourage people to self-categorize as ill based on vague and commonly experienced "symptoms." In this way, pharmaceutical companies market not only drugs, but also diseases themselves (Conrad 2007).

Yet, in the West, where prescription medications are regulated, the need for a prescription imposes some control on this process as physicians remain the gatekeepers to prescription drugs. In countries such as Thailand, DTC advertising is less regulated as are prescription medicines, which are commonly available from any village shop or pharmacy without resort to a physician for a prescription. In these highly unregulated contexts, little has been written about the ways in which DTC advertising and other medicine marketing strategies produce knowledge of risk and illness, medicalize common experiences, and lead to self-medication with powerful prescription medicines. The case of tetracycline marketing for "uterus problems" provides some preliminary insights into how this can occur. In this case, a drug company employed clinical ambiguity to link an antibiotic with a particular organ that is locally associated with a wide range of symptoms and conditions; in other words, the pharmaceutical company explicitly used local illness perceptions to their marketing advantage. While advocates of DTC advertising describe its role as promoting the development of an "educated consumer" who can engage in dialogue with his or her physician, DTC advertising takes on new meaning where physicians can be bypassed altogether as people seek "prescription" medications directly from pharmacies and provision shops.

These two case studies have illustrated how experience-near and experience-far sources of risk knowledge can combine and interact to impact perceptions of risk and risk management. The interplay between these levels is clear. For example, experience-far, global risk knowledge is translated to the local level via local experience that transforms an abstract idea into a concrete experience (Boholm 2003). The idea of dengue as a universally deadly condition, promoted by health education, becomes embodied in the particular village child who was treated in the hospital for its most extreme manifestation—dengue haemorrhagic fever—reinforcing the perception that all dengue carries a high risk of death. Local, experience-near "ethnomedical" risk knowledge is also translated "upward" and applied to the global realm of biomedicine. Concerns about incompatible (phit) substances are part of "traditional" medical knowledge in Northeast Thailand, where the concept is used to impose food restrictions during vulnerable states, such as during pregnancy or the postpartum period. The idea of phit substances has been extended to universal biomedical treatments in the form of injections and intravenous solution, applying a local risk concept to interpret and manage the risks of global biomedicine. The ways that local, "cultural" risk concepts are applied and the resulting risk management strategies people employ can only be understood by examining the complex interactions of the local and global, the cultural and political-economic, and the traditional and modern forces that inform them.

Jen Pylypa, Department of Sociology and Anthropology, Carleton University, C772 Loeb Building, 1125 Colonel By Drive, Ottawa, Ontario, K1S 5B6, Canada. E-mail: jen_pylypa@carleton.ca.

Acknowledgments

Thanks to all the families and health staff who shared their experiences in these two research projects. The women's health project (1997) was conducted with co-researchers Pimpawun Boonmongkon, Mark Nichter and Kornkaew Chantapasa; the assistance of graduate students and staff from the Center for Health Policy Studies, Mahidol University; and, the Faculty of Pharmacy and the Faculty of Nursing, Khon Kaen University. Thanks also to Kanokwan Tharawan, Christopher Elias and Suwanna Worakamin. Funding for the project was provided by the Ford Foundation, Thailand, and the Rockefeller Foundation. The febrile illness project (2000-01) was conducted with the support of Weeraform Phuangtum, Terdsak Phuangtum, Prakit Phromsakha, Tanida Saengpheng, Ratsamee Tongsai, Manop Kanato and Daravone Kittiphanh. Research was conducted in partial fulfillment of a doctorate degree in medical anthropology at the University of Arizona, with funding from the Social Sciences and Humanities Research Council, the U.S. National Science Foundation, the Wenner-Gren Foundation for Anthropological Research, and the Department of Anthropology (Riecker Grant) at the University of Arizona.

References

Beck, Ulrich
1992 Risk Society: Towards a New Modernity. London: Sage.

Berlin, Elois Ann, and William C. Fowkes, Jr.
1998 A Teaching Framework for Cross-Cultural Health Care. *In* Understanding and Applying Medical Anthropology. Peter J. Brown, ed. Pp. 303-309. Mountain View: Mayfield.

Berry, Nicole S.
2008 Who's Judging the Quality of Care? Indigenous Maya and the Problem of "Not Being Attended." Medical Anthropology 27(2):164-189.

Boholm, Asa
2003 The Cultural Nature of Risk: Can There Be an Anthropology of Uncertainty? Ethnos 68(2):159-278.

Boonmongkon, Pimpawun, Mark Nichter and Jen Pylypa
2001 *Mot Luuk* Problems in Northeast Thailand: Why Women's Own Health Concerns Matter as Much as Disease Rates. Social Science and Medicine 53:1095-1112.

Boonmongkon, Pimpawun, Mark Nichter, Jen Pylypa, Niporn Sanhajariya and Soiboon Saitong
2002 Women's Health in Northeast Thailand: Working at the Interface between the Local and the Global. Women and Health 35(4):59-83.

Boonmongkon, Pimpawun, Jen Pylypa and Mark Nichter
1999 Emerging Fears of Cervical Cancer in Northeast Thailand. Anthropology and Medicine 6(3):359-380.

Briggs, Charles L.
2003 Why Nation-States and Journalists Can't Teach People to Be Healthy: Power and Pragmatic Miscalculation in Public Discourses on Health. Medical Anthropology Quarterly 17(3):287-321.

Bujra, Janet
2000 Risk and Trust: Unsafe Sex, Gender and AIDS in Tanzania. *In* Risk Revisited. Pat Caplan, ed. Pp. 59-84. London: Pluto.

Chapman, Rachel R.
2003 Endangering Safe Motherhood in Mozambique: Prenatal Care as Pregnancy Risk. Social Science and Medicine 57:355-374.

Clarke, Juanne N., and Michelle M. Everest
2006 Cancer in the Mass Print Media: Fear, Uncertainty and the Medical Model. Social Science and Medicine 62:2591-2600.

Conrad, Peter
2007 The Medicalization of Society: On the Transformation of Human Conditions into Treatable Disorders. Baltimore: Johns Hopkins University Press.

Douglas, Mary, and Aaron Wildavsky
1982 Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers. Berkeley and Los Angeles: University of California Press.

Eichelberger, Laura
2007 SARS and New York's Chinatown: The Politics of Risk and Blame During an Epidemic of Fear. Social Science and Medicine 65:1284-1295.

Farmer, Paul
1999 Infections and Inequalities: The Modern Plagues. Berkeley and Los Angeles: University of California Press.

Fassin, Didier
2001 Culturalism as Ideology. *In* Cultural Perspectives on Reproductive Health. Carla Makhlouf Obermeyer, ed. Pp. 300-317. Oxford: Oxford University Press.

Geertz, Clifford
1983 Local Knowledge: Further Essays in Interpretive Anthropology. New York: Basic.

Giddens, Anthony
1999 Runaway World: How Globalization Is Reshaping Our Lives. London: Profile.

Gifford, Sandra M.
1986 The Meaning of Lumps: A Case Study of the Ambiguity of Risk. *In* Anthropology and Epidemiology: Interdisciplinary Approaches to the Study of Health and Disease. Craig R. Janes, Ron Stall and Sandra M. Gifford, eds. Pp. 213-246. Dordrecht: D. Reidel.

Good, Byron J.
1977 The Heart of What's the Matter: The Semantics of Illness in Iran. Culture, Medicine and Psychiatry 1:25-58.

Guttman, Nurit, and Charles T. Salmon
2004 Guilt, Fear, Stigma and Knowledge Gaps: Ethical Issues in Public Health Communication Interventions. Bioethics 18(6):531-552.

Hawkes, Gillian, and Gene Rowe
2008 A Characterisation of the Methodology of Qualitative Research on the Nature of Perceived Risk:

Trends and Omissions. Journal of Risk Research 11(5):617-643.

Hunt, Linda M., and Katherine B. de Voogd
2003 Autonomy, Danger, and Choice: The Moral Imperative of an "At Risk" Pregnancy for a Group of Low-Income Latinas in Texas. *In* Risk, Culture, and Health Inequality: Shifting Perceptions of Danger and Blame. Barbara Herr Harthorn and Laury Oaks, eds. Pp. 37-56. Westport: Praeger.

Janes, Craig R.
2006 "Culture," Cultural Explanations and Causality. International Journal of Epidemiology 35:261-263.

Janz, Nancy K., and Marshall H. Becker
1984 The Health Belief Model: A Decade Later. Health, Education and Behavior 11(1):1-47.

Kaufert, Patricia A., and John O'Neil
1993 Analysis of a Dialogue on Risks in Childbirth: Clinicians, Epidemiologists, and Inuit Women. *In* Knowledge, Power and Practice: The Anthropology of Medicine and Everyday Life. Shirley Lindenbaum and Margaret Lock, eds. Pp. 32-54. Berkeley and Los Angeles: University of California Press.

Kleinman, Arthur M.
1979 Patients and Healers in the Context of Culture: An Exploration of the Borderland Between Anthropology, Medicine and Psychiatry. Berkeley and Los Angeles: University of California Press.

Lupton, Deborah
1999 Risk. New York: Routledge.

Moynihan, Ray, and Alan Cassels
2005 Selling Sickness: How the World's Biggest Pharmaceutical Companies Are Turning Us All into Patients. New York: Nation.

Nichter, Mark
2008 Global Health: Why Cultural Perceptions, Social Representations, and Biopolitics Matter. Tucson: University of Arizona Press.

Ortner, Sherry B.
1999 Introduction. *In* The Fate of "Culture:" Geertz and Beyond. Sherry B. Ortner, ed. Pp. 1-13. Berkeley and Los Angeles: University of California Press.

Pylypa, Jen
2004 Healing Herbs and Dangerous Doctors: Local Models and Response to Fevers in Northeast Thailand. Ph.D. dissertation, Department of Anthropology, University of Arizona.
2007 Healing Herbs and Dangerous Doctors: "Fruit Fever" and Community Conflicts with Biomedical Care in Northeast Thailand. Medical Anthropology Quarterly 21(4):349-368.
2009 Local Perceptions of Dengue Fever in Northeast Thailand and Their Implications for Adherence to Prevention Campaigns. Anthropology and Medicine 16(1):73-83.

Radyowijati, Aryanti, and Hilbrand Haak
2003 Improving Antibiotic Use in Low-Income Countries: An Overview of Evidence on Determinants. Social Science and Medicine 57:733-744.

Scott, S., L. Prior, F. Wood and J. Gray
2005 Repositioning the Patient: The Implications of Being "At Risk." Social Science and Medicine 60(8):1869-1879.

Sjoberg, Lennart
2000 Factors in Risk Perception. Risk Analysis 20(1):1-11.

Slovic, Paul
2000 The Perception of Risk. London: Earthscan.

Smith, Daniel Jordan
2003 Imagining HIV/AIDS: Morality and Perceptions of Personal Risk in Nigeria. Medical Anthropology 22:343-372.

Suraratdecha, Chutima, Somying Saithanu and Viroj Tangcharoensathien
2005 Is Universal Coverage a Solution for Disparities in Health Care? Findings from Three Low-Income Provinces of Thailand. Health Policy 73(3):272-284.

Tangcharoensathien, Viroj, Suwit Wibulpholprasert and Sanguan Nitayaramphong
2004 Knowledge-Based Changes to Health Systems: The Thai Experience in Policy Development. Bulletin of the World Health Organization 82(10):750-756.

Towse, Adrian, Anne Mills and Viroj Tangcharoensathien
2004 Learning from Thailand's Health Reforms. British Medical Journal 328:103-105.

UNICEF (United Nations Children's Fund)
2005 Children and Young People in Thailand: UNICEF Situation Analysis. Bangkok: UNICEF.

Whittaker, Andrea
1996 Quality of Care for Women in Northeast Thailand: Intersections of Class, Gender, and Ethnicity. Health Care for Women International 17(5):435-447.
2000 Intimate Knowledge: Women and Their Health in North-East Thailand. Melbourne: Allen and Unwin.

Wildavsky, Aaron, and Karl Dake
1990 Theories of Risk Perception: Who Fears What and Why? Daedalus 119(4):41-60.

Wolf, Eric
1982 Europe and the People without History. Berkeley and Los Angeles: University of California Press.

Woloshin, Steven, and Lisa M. Schwartz
2006 Giving Legs to Restless Legs: A Case Study of How the Media Helps Make People Sick. PLoS Medicine 3(4):e170.