Diet and disease: transgressing boundaries between science and society—understanding neglected diseases through the lens of cultural studies and anthropology

Paladd Asavarut,[1] Peter J Norsworthy,[1] Joanna Cook,[2] Simon D Taylor-Robinson,[1] Rachel V Harrison[3]

It is vital that we consider human health from all perspectives, including the social, geopolitical and cultural aspects of wider society. A prime example of how such forces complicate patterns of disease is provided by examining the underlying epidemiology of cholangiocarcinoma (bile duct cancer (CCA)) in Thailand. With high prevalence in the northeast of Thailand (*Isan*) and most rural communities along the Mekong River in Southeast Asia, CCA in this region of the world results from a neglected tropical disease, chronic liver fluke infection, caused by consuming raw or undercooked freshwater fish infected with *Opisthorchis viverrini* (liver fluke) sensu lato. Although the relationship between diet and disease is common knowledge in the general population along the Mekong River, the cultural and sociological facets of dietary practice point to challenges that cannot be addressed by science alone. Untangling the CCA epidemic from the complex human behaviour of wanting to eat 'forbidden' food in Thailand provides a compelling case of how partnership between social and medical science and the humanities is key to making a sustainable impact in reducing disease patterns in the developing world.

While uncooked dishes are distinctive to *Isan* cuisine, the most infamous cause of CCA in Thailand is the consumption of an uncooked fish dish known as *koi pla*. It is, however, often overlooked that a large number of *Isan* staple foods feature fermented raw fish (*pla som*) or use it as a key seasoning ingredient (*pla ra*). The scope of the problem therefore goes beyond a single food item; rather, it is the local diet at large that is responsible for chronic liver fluke infestations and, ultimately, CCA. As a result, the *Isan* region, in general, and the major constituent province of Khon Kaen, in particular, is home to ca. 80% of the 10 million people infected with *O. viverrini* in the area, translating to a CCA disease incidence of >30 000 new CCA cases annually.[1–3] With 5-year survival rates of <11%, the disease is almost invariably incurable at the point of detection, and patients can then only be offered palliative, end-of-life care. Given the widespread existence of such a serious health problem in *Isan,* triggered by a clearly identifiable cause, there is evident demand for collaborative approaches based not only on medical intervention, but also on cultural and social understanding.

It is true to say that the problem is largely the preserve of the poor and that the rural northeast of Thailand has historically been disadvantaged in many key respects in relation to 'mainstream' Thai society. The foundation of the urban–rural divide that exists between nation's capital Bangkok and its outlying regions is attributable to the formation of the Thai state and its internally colonising past.[4 5] In the history of Southeast Asia, local dominating power circles (*mandala*) subjugated nearby states to establish a unified federation of a single ruling Kingdom through processes of centralisation.[6] In present-day Thailand, corresponding forces prevail with the effect of continuing to impose profound inequalities on rural *Isan*. Resulting from prolonged oppression, recent awakenings of these marginalised peoples account significantly for social fragmentation and a turbulent recent political history of unrest.[5] Against this backdrop, dominant forms of Bangkok-centric Thai culture that lay claim to higher civilisational standards fail to take account of and give voice or credibility to *Isan* identities.[7] Anthropologically linked to constructions of masculinity, kinship and celebration, the consumption of raw food is embedded in *Isan* cultural practices. Contemporary social and political issues in terms of the relationship between *Isan* and the capital are therefore reflected in the entanglement between social practice and notions of local and gendered identity, community and solidarity (figure 1). As a result, defensive, antagonistic responses and resistance to the discourses of a powerful centre serve to reinforce conscious risk-taking practices, of which the consumption of raw fish is an important case in point.

The depiction of health in Thai media and literature clearly portrays the power relations and tensions between the urban and rural. A renowned commercial, released to all public television channels by the Thai Health Promotion Foundation, typifies the condescending top-down approach to behaviour change in its campaign against alcohol consumption among Thailand's rural poor.[8] The resistant response to this well-known depiction of the subaltern is reportedly to raise a bottle of beer or rice wine (*lao khao*) in a defiant toast in Thailand's *Isan* villages. With specific reference to the campaigns against raw fish consumption, those couched in central rather than local Thai dialect are likely to appear removed from the cultural issues at hand and hence ineffective in terms of the didactic message they deliver.[9] For communications to relate most closely to their target audience, we argue that they need to be couched in local dialect and in terms of local cultural references, paying due respect to the specific cultural and artistic practices of the region. Nowhere better are these practices exemplified than in Kampoon Boontawee's award-winning modern Thai novel *Luk Isan* (*A Child of the Northeast*), first published in 1979 and translated into English in 1988.[7 10] Moreover, the novel further makes clear the condescending attitude towards northeasterners and their cultural mores held by metropolitan Thais.

It is therefore necessary to re-examine the paradigms that have been used to date for medical intervention in the context of CCA in northeast Thailand. Over the past decade, continuous efforts have been made to raise awareness of CCA, and yet, a resistance to change in dietary practices remains. Although extensive public health campaigns have aimed to reduce the consumption of raw or undercooked fish, the top-down, didactic and oppressive nature of the centralised education programmes has arguably hindered open dialogue and

[1]Wellcome Centre for Global Health Research, Imperial College London, London, UK; [2]Department of Anthropology, University College London, University of London, London, UK; [3]Department of South East Asia, School of Oriental and African Studies, University of London, London, UK

Correspondence to Dr Rachel V Harrison, Department of South East Asia, School of Oriental and African Studies, University of London, London, UK; rh6@soas.ac.uk

Figure 1 Artwork by Thai contemporary artist Prakit Kobkijwattana. In this image, Nicolas Henri Jacob's anatomical lithograph is superimposed by a Thai headdress in high cultural style, depicting the imposition of social and cultural constructions on humans as biological subjects.

failed to take account of necessary levels of intercultural communication and understanding. Furthermore, the forms of uncritical deference and hierarchical thinking required as culturally appropriate do not allow for local expressions of agency. While the value of state-provided learning should not be dismissed, sustainable change is conditional on acceptance of disease risk and potential of death at the grassroots level.

For almost 30 years, government campaigns aimed at preventing the consumption of raw fish in the region have realised limited success. A powerful example is provided by the series of government health promotion campaigns under the name 'Isan mai kin pla dip' (literally translated to 'Isan does not eat raw fish'), which aimed to reach out to communities by dispersing information through local health centres and radio programmes.[11] Still, the incidence of CCA fails to decrease while its epidemiology and parasite biology continues to grow in complexity. Additionally, the uptake of health and medical messages communicated from government to villages become misconstrued or misinterpreted, exacerbating both disease incidence and people's misunderstanding of the significance of sanitation and hygiene. A notable example is of the misuse (incorrect dosage and frequency) of Praziquantel (a deworming medication) in order to maintain risky eating habits.[12] Clearly, the methods of communication used by the government have not allowed sufficient rapport to be established with local people who understandably hold their own cultural values in high esteem. As a result, infections persist in the poor, making CCA a neglected regional problem in Thailand.

Another important dimension of the way Isan people handle health issues pertains to the power of local forms of Buddhism. From bedside to crematorium (*mane*), the 'Thai way' of preserving identity and accepting death with Buddhist dignity may in effect mask anxieties relating to questions of cultural belonging and local versus national forms of identity. In Khon Kaen, the power of local and personal forms of Buddhism manifests itself in the wards of major regional hospitals, such as Srinagrind Hospital (Khon Kaen University) to the homes of terminal patients, who use Buddhist meditation and ceremonies of forgiveness to ease their passing.[13] These local beliefs have now been integrated into regional palliative care programmes, named 'The Gentle Touch', which have found major success in allowing terminal patients to meet death at home with their families. The local palliative care programme and observed behaviour in wards of hospitals indicate that management and prevention of issues that relate deeply to identity require us to review the way medicine and public health are managed at personal and societal levels. In a broader context, the cultural homogeneity that exists between *Isan* and Laos, Cambodia and Vietnam also foretells the regional significance that effective social and medical intervention will bring.[5] Hence, it is crucial that tangible social changes at the local level come hand-in-hand with scientific progress.

The social and political awakening of *Isan* warrants the need for social science and the humanities to play a significant role in resolving medical and societal issues in the region. While universal healthcare is available, interventions from the perspective of the humanities are becoming increasingly integral to medical progress. The growing impact that village health volunteers have on quality of life is testament to the intimacy required in global health research.[14] Importantly, it is essential for health practitioners and policymakers to first understand the relationship that locals have with medicine, and how people respond to information at the local and personal level. By understanding what people need, public health information and education programmes can then be implemented in a way that is conducive to change. It is crucial to note that addressing the problem of liver fluke infection is not only a matter of changing diet, but also an overall increase in social and economic welfare. In this regard, the immersive methods that anthropology and cultural studies offer are thus vital in excavating the ambiguities and contradictions that exist within and between science and society, and their relationship to each other. When diet is embedded in the performance of cultural identity, there is a deep and dynamic effect on the way that local livelihoods are maintained, or how rural youth is uprooted into urban prosperity. In times of subversion and change, the complexities surrounding food and politics may furthermore put people's perception of society and its power systems into question. The processes of social exclusion must therefore be examined in order to uncover why the modernity of science has had limited impact upon a marginalised people's embedded relationship with traditional local practices.

The understanding of dynamism in human behaviour is key to the effective implementation of medicine. Although the approaches by which natural and social scientists dissect and appraise health problems differ, both are part of our biological and cultural heritage. Unlike science, comprehending human consciousness, experience and interactions requires subjective, qualitative and critically reflective methods that involve the in situ submergence of scientists in the environment of the question at hand. The sociopolitical and health problems in *Isan* clearly draw a parallel with objectivity in science: from outside looking in the problem is a medical one; but from the inside looking out, the question is a sociocultural one. For science to have the pragmatic value it requires, it must gain an insight into how societies and their politics construct cultural and personal identities. For that reason, interdisciplinary collaborations between social and medical sciences are fundamental for preventing disease and promoting human development.

Placing health in the broader context of developing societies can help to elucidate the ways in which social factors play a critical role in translational medicine. Understanding how science is perceived and embraced requires us to broaden our study of hosts and subjects as *people*. As such, it is essential to transgress the conventional boundaries between science, social science and the humanities if modern medicine is to make a lasting impact on society.

Twitter Follow Paladd Asavarut at @MikeAsavarut

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