letters

Human genomes

Surely there is something wrong with the legend (p.24) to the genealogy feature on the cover of A.T., October 1999? Does every single ultimate descendant of the index couple in generation I really have asthma? And no-one in preceding generations? □

Roland Littlewood
University College Centre for Medical Anthropology, University College London, Gower Street, London WC1E 6BT

Gísli Pálsson and Paul Rabinow reply:

We welcome the opportunity to clarify the genealogy feature on the cover of the October issue of A.T. and to respond to Roland Littlewood's queries. As far as we know, there is nothing wrong with either the image or the legend about the asthma patients. First, careful reading of the image will reveal that Littlewood is wrong in assuming that 'no-one in preceding generations' has asthma. There are three cases of asthma patients in adjacent generations. If one thinks of the circular genealogical image as a clock, the first parent-child pair occurs at roughly 10:05, the second at 10:15, and the third at 3:40. More importantly, the diagram is not a complete representation of the descendants of the couple in generation I; rather it shows the relationships between those in the ultimate generations who have been diagnosed as asthma patients. Therefore, one should not conclude that every single ultimate descendant has asthma. Finally, the 'empty' symbols in earlier generations do not necessarily suggest the absence of asthma. Such symbols, in line with standard genetic practice, are routinely applied to both those who are known not to have the disease in question and those who have not been diagnosed. □

Human populations as cancers

The review by Roy Willis (A.T. , April 1999) of the 1998 American Anthropological Association Annual Meeting was a pleasant read. It is particularly satisfying to learn the AAA press office gave prominence to Warren Hern's session and related proposal that human populations are to ecosystem as cancerous cells are to normal cells.

As a physician-anthropologist and director of a medical school program in Clinical Anthropology, this idea has long impressed me as a valid medico-anthropological concept, not just an apt metaphor. As it happens, our group formally presented this idea at the Human Behavior and Evolution Society in 1991 (Wilson, D.R.; Page, W: Roundtable – Human population structure in the modern world: A Malthusian malignancy. *Human Behavior and Evolution Society*, Hamilton, Ontario, Canada, 1991).

We delineated features of human population growth compatible with a 'clinical and histopathologic' diagnosis of a high-grade, widely metastatic carcinoma. While the full description has not been published and is beyond the scope of a short letter, a brief summary (annexed) is perhaps of interest to the A.T. readership.

Would but that this were only in jest but the issue is one of serious medico-anthropological concern.

Human population structure in the modern world: A Malthusian malignancy

Contemporary human population structure has diagnostic characteristics of a desmoplastic, superficial spreading carcinoma of planet Earth. In particular, the precursor lesions, anatomic site, mitotic count, tumour thickness, pattern of invasive growth and presence of nodular metastases are consistent with such a tissue diagnosis.

As in any malignancy, histologic criteria may never be completely sufficient to assure prognostic accuracy. The fundamental change that renders a cell-line aggressive may not be morphologically clear and reliable evaluation may require immunohistochemical, molecular or even ecologic markers to establish definitive diagnosis and prognosis.

Nevertheless, it is feasible to outline a preliminary time-specific staging sequence. Humanoid 'tissue' traces its embryo-phylogenetic origins from early 'stem-cell' terrestrial vertebrates through a mamillo-primatologic 'cell-line'. Hominoid tissues, sensu stricto, are normally found in only in an African range. Such tissues are rarely neoplastic in this normal distribution.

However, from the early Holocene precursor cells with malignant potential were evident in a peripheral cornu (the ancient Near East). It is generally thought these precursor lesions were manifestations of dermoid reactions arising from novel dietary exposures available with abundant epipaleolithic foraging. Shortly thereafter, carcinoma in-situ (Stage Zero) emerged as 'domesticated' cereal and animal tissues were incorporated into a more complex local tumor of human histogenesis. Subsequent extension of this primary tumour growth into the submucosal regions of central Asia and southern Europe was evident by progression of agricultural micro-satellites (Stage I).

These progressions were rapidly succeeded by further local penetration and/or metastases with pathognomonic lesions comprised of thick, urbanoid plaques (Stage II). These plaques were notable for well-differentiated socioeconomic cell classes. Interestingly, the lithic cellular inclusions typical of these hominoid malignancies were unevenly but inexorably displaced by cuprous and ferrous inclusions. These metallic inclusions apparently are the precipitates of the progressively more carcinoid metabolites accumulated within the more malignant histiotypes increasingly common in the mid-to-late Holocene.

Clear cut distal metastatic disease (Stage III) was evident by the early historical era. At juncture distal implantations of more highly-differentiated, nodular malignancies were palpable – particularly in Asia and the Indian subcontinent. Such peripheral metastases were accompanied by transformation of the primary tumour clonal derivatives into more malignant types (at least as characterized by cell turnover and mitotic counts).

The somatic distribution of tumorous aggregations was long and unilaterally constrained to the Eastern Hemisphere of the globe. Though carcinoma in-situ of the Western Hemisphere is perhaps as old as the original Near East lesion, transformation did not occur. Rather there was late but exceedingly rapid displacement of Western Hemispheric tissues (Stage IV) by metastases, as is sometimes eponymously termed the 'Columbian Progression'. Incidentally, recombinant assay of these metastases demonstrate a predominance of eurocell types, notably distinctive Hispanic and Anglo clones.

Perhaps most alarming is the onset of possibly agonal and certainly debilitating destruction of vital organ system functions (Stage V). Though the precise diagnostic features remain controversial, a low-grade fever of unknown origin is frequently noted as well as acute respiratory distress. The latter appears to be an acquired cultural feature of smoking of petroleum distillates which culminates in an insidious deterioration of the global oxygen gradient as well as cavitating lobar infiltrates of the pulmonic rainforest. Similarly, incipient hepato-renal failure is frequently a feature of late disease.

Such trends, frequently pre-terminal, clinically correlate with serum levels of toxic metabolites in the circulatory system, e.g., respiratory alkalosis, high titers of protein-bound xenochemicals such as DDT, oily oceanic effluences, the positive 'aquifer sign' and metallic or plastic emboli. Finally, tumoor necrosis (the 'city-centre syndrome') is a very late manifestation typically evidenced in large primary or metastatic growths, especially those some centuries old or those with cell counts in excess of 6,000,000. Fulminant cavitation of the solid tumour occurs as the vascular supply to the urbanized core collapses on itself, often with endotoxic but sterile cyst formation. □

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Lettera ad Antropology Today del 6 dicembre 1999

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