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September 14-15, 2017 | Edinburgh, Scotland

Uncivilized genes; How a greater understanding of the evolutionary determinants of health could improve our urban wellbeing

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This paper is concerned with the prevention or containment of World Health Organization's ten most common fatal diseases or conditions in modern urban populations. This ambitious target could be achieved over time given a greater understanding of the Evolutionary Determinants of Health. The underlying concept lies in our evolutionary biology. As recent genetic research has shown, we share 98% of our genome with the chimpanzee (*Pan troglodytes*), and thus have a common ancestor, from which our lineage diverged some 6 million years ago. Subsequently the human branch adopted bi-pedal hunter-gatherer-style cultures, living in small tribal societies in the wild, wide open spaces. Through the unbending rigours of natural selection, a particular physiology, dentition and metabolism developed together with their associated digestive and respiratory systems as well as associated psychological traits. This part of our DNA directly supporting those ancestral lifestyles is termed as palaeolithic genome: it still remains with us, largely unchanged, although culturally we have evolved at an electric pace. There is therefore a mismatch between our modern urban lives and our basic biology, manifesting itself in the alarming increase the incidence of obesity, diabetes, various coronary issues and cancers. Significantly, such problems seem to be rare in non-urbanized societies, such as the Kitava community in Papua New Guinea as a detailed study by Dr Staffan Lindeberg has shown. If our urban lifestyles, architecture and even town plans were reconfigured on evolutionary-concordant lines, our health, immune systems and wellbeing would be significantly enhanced. Uncivilized genes can materially improve tomorrow's civilizations.

Biography

Gustav Milne studied Archaeology at Oxford and London University, and worked as an Archaeologist for the Museum of London since 1973, excavating sites and publishing many reports and books. He then joined the UCL Institute of Archaeology where he lectured for a further 25 years. He helped to set up the museum of London's Centre for Human Bio-archaeology and the Evolutionary Determinants of Health programme, where archaeologists worked with a consortium including microbiologists, architects and transport planners.

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