Reviews of Books

Sykes, Bryan, *The Seven Daughters of Eve*. New York and London: W. W. Norton and Co., 2001. 297p. ISBN 0-393-02018. (hdb)

In the last 20 years or so, hundreds of popular books on science have been published. Few though can claim to have captured the public imagination to the extent of becoming best-sellers and the one reviewed here must join them. Its subject matter is of engaging interest, an interest sustained by its brilliant exposition and clear communicative prose style, and not a little wit. It is further absorbing for its demonstration of the power of science to solve the conceptual and empirical problems of social science in an era when science has been denigrated by critics of a deconstructionist and post-modernist perspective. The book reveals as well the bitterness of rivalry, the politics of publication and the disputes that are often found in the frontiers of disciplines, in this case from the point of the victors.

Sykes, who is Professor of Human Genetics at the Institute of Molecular Medicine in the University of Oxford, is perhaps the foremost researcher in the branch of population genetics based on the study of mitochondrial DNA. Mitochondria are structures in the cytoplasm of cells of living organisms. They were previously important only for their role in aiding cells in using oxygen for the production of heat and thus energy. Their DNA is unusual in its structure (its double helix forms a circle) and location (in the cytoplasm rather than in the cell nucleus), but more particularly so, because this DNA is passed on only along the female line, and also because mutations in its structure occur exceedingly rarely (by contrast with the recombinatory constancy of DNA in a cell nucleus). To cut to the main point then, the direct matrilineal transfer of their DNA in theory allows one to chart the direct female ancestry of all living women (men by contrast pass on only nuclear DNA). All that is required is a sample of DNA, which today is easily obtained by a simple swab taken from the cheek wall.

Sykes has managed to obtain DNA samples from thousands of Europeans, to check the sequences of mutations in one section of each sample and then compare them. As a result, the central claim of his work is that most present day Europeans can be traced genetically to seven women who lived variously from 10,000 to 45,000 years before the present. His claim does not deserve to be so glibly stated however, as his conclusions come from six years of torturous and controversial work, that must be read to be fully savoured.

Need it be said that this research rocked both the worlds of prehistory and genetics. Two of the enduring debates in prehistory have been about the genetic relationship between the early hominids (*Homo neanderthalensis* and *H. sapiens*—and attendant upon that, the whole question of African genesis), and about the impact of agriculture on the Mesolithic hunter-gatherers who lived in Europe from the earliest time mentioned above. Sykes is able to show that modern humans (*Homo sapiens*) are not descendants of the Neanderthals at all (despite what he humorously describes as letters to him from the public confirming their sighting of Neanderthal descendants here and there) and that we

probably shared a common mother in Africa (a "mitochondrial Eve", living about 150,000 years ago) whose descendants moved to the middle East about 100,000 years ago, and then around 50,000 years later, migrated slowly to Europe and Asia. This revelation, though controversial to multi-regionalists, was not as inflammatory as his rejection of the orthodox view that most Europeans were descendants of a wave of Neolithic farmers who moved in from the middle East about 10,000 years ago to replace the hunter-gatherers. In fact it seems that about 80% of us can trace our ancestry to the hunters rather than the farmers.

Sykes solves many other empirical and conceptual puzzles. Amongst the former, he proves that the Polynesians came from Asia directly, sadly contradicting Heyerdahl who postulated an American origin, but supporting the dominant view. Of the latter, he shows that there is no objective (scientific) basis for the concept of race. Though race has been virtually rejected in social science, some genetic and blood grouping studies had preserved the idea in science. Sykes uses the concept of clan to describe the groupings he has found. Members of the clans are found so widely spread across Europe as to cut across notions such as tribe, race, nationality (concepts that we can view as parasitic on 19th century political and taxonomic ideas). The concept of race must be seen now as being fatally flawed as much as it was conceptually muddled in the first place. The value of kinship, traditionally based on paternal lineage, is also diminished. And for the autonomy of social science, it is another nail in the coffin. The lavish speculations of prehistorians wither when their claims are reduced to testable theories in genetics.

The key to Sykes's claims is the rate of mutation in mitochondrial DNA and to a lesser extent the validity of the technique for identifying mutations along a section of DNA. The most difficult part of his research was determining the set of genetic pathways (sequences) that related the mutations in the mitochondrial DNA that has survived to the present. This was necessary in order to confirm the claim for the seven mothers. The reader has to take Sykes's assurances of accuracy in these matters, but this can be readily given in return for what is so honestly explained, and accepted by his scientific peers. He reports that his findings are confirmed by independent discoveries relating to the Y-chromosome also.

Nearly one third of the book is devoted to a sketch of the possible lives of the seven mothers. I have always viewed such re-creations as somewhat fanciful and over-richly informed by present knowledge, but Sykes makes them interesting and credible. Other chapters of the book are devoted to the Iceman and Cheddar man (prehistoric skeletal finds that Sykes has identified by their mitochondrial signature), to the confirmation of the identity of the last Tsar of Russia from the purported remains found at Ekaterinburg (Sykes discovers he is an exact relation—its a one-in-seven chance, you may also be related to him), to the origin of the Golden Hamster (yes, as rumored, all of them are descended from one female), and finally to a brief discussion of the genetic relationship between all humans. Though world-wide sampling of mitochondrial DNA is at an early stage, it appears that there may be only 33 mitochondrial groups ("clans") in existence.

I finish this review with the sense that I have not done justice to the exposition of Sykes's research program, much less so to the brilliant inductive steps and plain hard slog undertaken in unravelling the story embedded in mitochondria, particularly to the mathematical schemes for deriving sequences that relate mutations. The questions that remain open are not necessarily for Sykes to answer, though it is interesting to think of what still remains to be discovered as a result of further worldwide testing of mitochondrial DNA samples by his team and others.

A number of issues arise for linguistics, the most prominent of them being the separation of the Neanderthals from consideration in tracing the history of human language. We need no longer concern ourselves so much with questions such that of the adequacy of the shape of the supra-laryngeal vocal tract of the Neanderthals. It is now more conceivable too that there was once an

Ursprach—that languages did not evolve from separate others. The Middle Eastern origins of the Indo-European family of languages gets confirmation too, though it may also point to a prior super-family.

The simple and modest way in which Sykes tells his story tends to mask its profundity. So though I have tried to outline its main points, I have not done the book the justice that reading alone could do. Not only will you not want to put it down—this is often said—you may even wish to re-read it immediately as I did.

Michael Herriman

Anna Wierzbicka, *Emotions across Languages and Cultures: Diversity and Universals*. Cambridge: Cambridge University Press, 1999. 361p. ISBN 0-521-59971-7. GBP15.95 (pbk); ISBN 0-521-59042-6. GBP45.00 (hdb)

Anna Wierzbicka's distinguished work in semantics should be known to everyone working in the fields of translation, foreign language teaching or cross-cultural studies. *Emotions across Languages and Culture* is just one of more than 20 significant works in cross-language studies in which she applies a particular methodology to essay into disentangling the universal and translatable from what is language—and culture-specific. That methodology, with which she is associated, and which is associated with her name, is a form of componential semantic analysis using a "Natural Semantic Metalanguage" based on "semantic primitives" and "lexical universals".

In the introduction to *Emotions across Languages and Cultures*, Wierzbicka identifies the confusions in the anthropological and psychological literature about what constitutes "emotions", what "emotions" actually are, and points out that even

> "… the word *emotion* is not as unproblematic as it seems; and by taking the notion of 'emotion' as our starting point we may be committing ourselves, at the outset, to a perspective which is shaped by our own native language, or by the language currently predominant in some academic disciplines rather than taking a maximally 'neutral' and culture-independent point of view. [2] …"

More specifically,

> "… *emotion* combines in its meaning a reference to 'feeling', a reference to 'thinking', and a reference to a persons body [2] …"

while, for example,

> "… in ordinary German there is no word for 'emotion' at all. The word usually used as the translation equivalent of the English *emotion*, *Gefuhl* … makes no distinction between mental and physical feelings…. The same is true of Russian… where the noun *čuvtsvo* … corresponds to feeling whereas the plural form suggests cognitively based feelings…. Samoan has no word corresponding to the English term *emotion* and relies, instead, on the notion of *lagona*, 'feeling' … [3] … Thus, while the concept of 'feeling' is universal and can be safely used in the investigation of human experience and human nature, … the concept of 'emotion' is culture-bound and cannot be similarly relied on." [4]

"Feel" then is one of five dozen or so semantic primitives, representing simple, non-decomposable, universal and translatable concepts which Wierzbicka uses to "discover", in chapter 2, universally comprehensible cognitive scenarios for culturally specific emotion terms such as *joy, happy,*

happiness, contented, pleased, pleasure, delight, relief, excitement, hope, categorised as "something good happened". Other categories include "bad things can happen" (*fear* and *afraid, fright, terrified, petrified, horrified, dread, alarm, panic, anxiety, worry, worried, concern, apprehension*), "I don't want things like this to happen" (*anger, indignation, fury*, etc), "thinking about other people" (*envy, compassion, Schadenfreude, admiration*, etc), and "thinking about ourselves" (*shame, pride, remorse* etc.).

Other chapters of *Emotions across Languages and Cultures* deal with the peculiarly German concept *Angst*, identifying universally comprehensible readings of human faces, Russian emotional expression, and a comparison of Polish versus American emotional norms, while the final chapter is concerned with identifying universal emotions divorced from the constraints of particular languages.

Emotions across Languages and Cultures is a scholarly but generally accessible work which makes an important contribution to our understanding of language, culture and human emotions, and to disentangling our discourse from the constraints of our own ethnocentricity. Perhaps more importantly, this work is a continuation and refinement of Wierzbicka's linguistic methodology. This methodology, using a natural semantic metalanguage to overcome culture-bound language-shaped ethnocentricities to dissect and shed light on features of other languages and cultures, has immediate practical applications in translation and translation theory, and important implications for foreign and second language teaching. At least one of her recent works is strongly recommended for anyone serious about work in these fields.

Varying aspects of the methodology such as its historical origins and its relationship with other approaches to the study of languages are explored in the introductory sections of several of her works, including the highly recommended, scholarly but accessible *Semantics, Culture and Cognition*, and *Understanding Cultures Through Their Key Words*. The fullest exploration and justification of the methodology is to be found in *Semantics: Primes and Universals*, recommended as a text for advanced students of comparative linguistics.

Emotions across Languages and Cultures is not Wierzbicka's most recent major work. That distinction belongs to *What Did Jesus Mean*?, a provocative work which reflects not only her commitments as a Catholic, but also demonstrates further just how deep and wide is her scholarship in linguistics, anthropology, and cultural psychology. Like her other works, it also reflects a fulfilled commitment to the comprehensibility of academic writing while not swerving from exploring the complex or contentious. Her books are good to read.

Gerry Meister

References

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