

**COMMENT IN REPLY:  
AN INTERDISCIPLINARY DISCOURSE ON  
THE ROLE OF IODINE IN HUMAN EVOLUTION**

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The highest goals of science are the discovery of facts never before noticed, the posing of questions never before asked, and the exploration of explanations never before considered. Until the appearance of my article on iodine in human evolution (Dobson 1998), just one obscure publication had noted the similarity between Neandertal and cretin morphologies (Finkbeiner 1923), no one had asked about iodine utilization or thyroid function in Neandertals, and no one had suggested that the thyroid gland might offer a single key to the evolution that advanced modern humans beyond Neandertals and earlier hominid species. Ultimately, however, science benefits only if scientists in many disciplines acknowledge newly discovered facts. Asking their own questions, they must pose and debate alternative explanations.

The commentaries by Susan J. Crockford, Harold D. Foster, and Ian Tattersall in this issue of the *Geographical Review* are among the first scholarly responses to questions I posed. They are an exceptional collection due to the stature of all three commentators and the original research contributions offered here by two of them. Foster is a leading authority on the geography of modern-day iodine deficiency disorders (IDD) and selenium deficiency disorders. Crockford is a leading authority on thyroid hormone physiology in animals. Tattersall is a leading authority on Neandertal evolution. Together, their commentaries and my reply represent the kind of interdisciplinary exchange that is essential to achieve the integrative, holistic ideal claimed by geographers. My reply addresses their specific comments within the context of diverse disciplines interacting with one another.

A CLARIFICATION, FOR FAIRNESS AND ACCURACY

In my original article I concluded that Neandertals share many distinctive morphological traits with modern humans suffering from endemic cretinism. That does not necessarily mean that Neandertals were suffering pathologically from cretinism. I took great pains to clarify that there are two possible explanations, one pathological and the other genetic, each of which has variations within it. I did not conclude in favor of either option, but I stated clearly that my preferred "Occam's razor" solution is the genetic one. Yet virtually all of the public commentary has focused on pathology. Many newspaper accounts start with headlines misquoting me as concluding that Neandertals were merely modern humans suffering pathologically from cretinism. Even in the accompanying commentaries, Crockford and Tattersall

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