

---

Professor Constantinos Deltas  
Director, Molecular Medicine Research Center  
Head, Laboratory of Molecular and Medical Genetics  
Department of Biological Sciences  
Faculty of Pure and Applied Sciences  
Kallipoleos 75, 1678 Nicosia, Tel: +357-22-892882  
E-mail: [Deltas@ucy.ac.cy](mailto:Deltas@ucy.ac.cy), <http://www.ucy.ac.cy/mmrc>

### **Greek-Cypriots and Turkish Cypriots**

On January 10<sup>th</sup>, 2012, I was invited to deliver a lecture at the “Cyprus International Institute for Environmental and Public Health” of the Cyprus University of Technology. Most of the audience were students attending a post graduate program of studies. My lecture concerned the genetics of Cypriots with emphasis on inherited disorders that have been described over the past 20 years among Greek-Cypriots. After this lecture I realised that a small selected part of it was communicated to the mass media, while some of the statements I made were misinterpreted. The misinterpretation concerned especially the genetic relationship between Greeks from Greece and Greek-Cypriots (G/C) living in Cyprus.

For those who have no basic knowledge of molecular and population genetics, it is easy to misunderstand the information I presented. The lecture referred to a great deal of inherited disorders and genetic characteristics that we have identified among G/C through research of my group and others during the past 20 years. These were research programs that helped very much in the diagnosis and treatment of thousands of patients with inherited disorders. The issue that was misunderstood because of erroneous interpretation was not a central point of the lecture but it concerned one of the many diseases I presented data on. This disease was  $\beta$ -Thalassaemia for which I presented data of other researchers (not of my group) that had been published in a scientific journal in 1992 (*British Journal of Haematology* 81: 607-609, 1992). The laboratory in which this research was done is located in the state of Georgia of the USA and the research group included American, G/C and Turkish-Cypriot (T/C) researchers. The laboratory was headed by Prof. THJ Huisman. The essence of the results was not the casting of any doubt on the Hellenism of G/C, as it was mis-communicated by some, but their likely genetic similarity to their co-patriots, T/C. This genetic similarity as regards specific genetic markers ( $\beta$ -Thalassaemia mutations), comprises an indication for the relatively recent relationships between Greek- and Turkish-Cypriots. This genetic indication supports what is already very well known from historical evidence; that is a few hundred years ago, during the Othoman Empire occupation of Cyprus, of 1571-1878, many G/C converted to Islam and became Linovamvakoi (meaning they used to live on the frontier between Christianity and Islam). This is a well known historical fact which also took place among other Christian populations of European countries which spent time under the Othoman Empire during previous centuries. From the genetic point of view, conversion to Islam comprises a recent development which is still overt today, witnessed as a similar frequency of genetic markers between these two population groups, the G/C and the T/C. What was probably misunderstood is the smaller genetic similarity between Greeks from Greece and G/C, always as regards the frequency of  $\beta$ -Thalassaemia mutations. This finding does not in any way doubt the Greek origin of G/C, neither does it contradict the historical knowledge according to which G/C are mostly descendants of ancient Achaeans Greeks who massively colonised Cyprus a few thousand years ago. Of course, even if not many thousands of Greeks came from Greece in those times to colonise Cyprus, what is of paramount importance is that

Cypriots since those ancient times adapted the Greek civilization and way of thinking and we all feel Greeks, maintaining same language and religion to a great extent. However, during the passing centuries a few facts took place.

- a. There has not been continuous palindromic admixture of the two populations in Greece and Cyprus.
- b. There have not been continuous and on permanent basis random marriages between Greeks and G/C to a great extend.
- c. To the contrary, there have been many, and still ongoing marriages of G/C with foreigners.
- d. There have been many waves of occupants and visitors in to the island over the centuries.
- e. The G/C population has always been relatively small and therefore it is to sustain imbalances to a great extent, as regards genetic equilibrium.

(c) and (d) above favoured the genetic flow of genes in to the G/C gene pool, coming from non- Hellenic populations, through sexual relationships. This, however, does not have any essence of significant bearing as regards the feeling of Hellenism among G/C. Similar phenomena and especially genetic flow of genes from one population to another had been taking place in a smaller or greater degree in all human population over the centuries, since the movement out of Africa 60.000 years ago.

All of these most probably are responsible for the several genetic markers of  $\beta$ -Thalasaemia being of smaller similarity between G/C and Greeks from Greece, or T/C and Turks from Turkey, compared to the similarity between G/C and T/C. This is easily explained by the fact that G/C and T/C actually comprise the same homogeneous population group. Consequently, it is logical that through the centuries there has been a genetic flow of genes in to the Cypriot gene pool, so much from Greeks of Greece as well as from other foreign populations, a fact which is imprinted in the genetic composition of G/C, which however also explains the discordance of the frequencies that have been altered through the centuries. It is important to take in to consideration that according to this research which was published in 1992 there is reasonable indication but perhaps not a proof that T/C are in reality G/C who converted to Islam and afterwards became an integral part of the Turkish community, something supported also by the existing historical evidence. Another two probable interpretations of this similarity between Greek- and Turkish-Cypriots is that during the Othoman Empire and afterwards there might have been many and frequent sexual relationships among them through weddings, or that these findings are the result of pure luck. As regards frequent sexual relationships there is no support from any historical evidence. Also, the likelihood of this being a result of pure luck although it cannot be excluded, the probabilities are very slim. On the other hand, the Linovamvakismos is a written known historic fact.

Therefore, it is absolutely justifiable, predictable and expected that there is a genetic similarity between Greek- and Turkish-Cypriots since in reality they are part of the same gene pool as they belong to the same original population. For those who are interested there are ample genetic indications and in some occasions proofs for the relationships between G/C with other European populations through the centuries. At the same time the same research brings to light many peculiarities for which we cannot expand in this article at the moment.