**Quo vadis homine? Or where the marriage goes?**

**Quo vadis homine? Ili: Kuda ide brak?**

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Individuals are consanguineous if they are descended from a common ancestor no more remote than a great, great grandparent. The progeny of consanguineous parents are regarded as inbred. Within a particular society, the population structure and social customs determine the frequency of consanguineous mating; certain marriage requirements as set forth by the church and/or state, are designed to prevent very close mating.

Inbreeding of domestic animals can preserve and fix desirable properties and eliminate unfavorable characteristics from livestock. Closely related animals may be mated to produce pure breeds of animals and select offspring of specific desirable types. However, because homozygote is less fit than heterozygote, inbreeding over a long period risks the loss of vigor in the offspring. Similarly, plants are inbred for improved characteristics, either by self-pollination or crossing with closely related plants.

The situation in humans is far more complex. Genetic effects of inbreeding can be detected in the inbred individual, in the form of gene doubling. Affected genes appear as a single line in each of the common ancestors but double in the progeny. In other words, modern genetic technology allows us to show how consanguinity reveals recessive inheritance and recessive traits.

One means of reducing the accumulation of undesirable or potentially dangerous genetic material in human population is to prevent conception. Same sex marriage, legalized in some countries, does not produce children and is thus exempt from consanguinity restrictions. If same sex marriage became universally legal, mating among close cousins, or even brothers or sisters, uncle and nephew, and aunt and nice. A same sex marriage without the possibility of conception is the most efficient way to control reproduction, but this idea is not universally accepted. In the first place, only a small percentage of the population would likely be affected, since the heterosexual population is much larger than a homosexual one. Secondly, and more importantly, many people consider a homosexual relationship to be an unnatural, even evil. It thus becomes increasingly difficult to predict in which direction marriage will go.

**Marriage at Square One**

Each nation or state has its own requirements for what constitutes a valid marriage. These marriage laws form a contract that allows two persons to live together as husband and wife. Most marriage laws apply some restrictions, including a statement that cousins or closer relatives may not marry among themselves.

Every society considers incest as a taboo. An accumulation of recessive traits, including morality, in the progeny of consanguineous mate undermines and weakens society and can impose long lasting social and medical problems. In almost all societies mating between parent and offspring, brother and sister, and among first cousins is considered to be incestuous, and steps were often taken to prevent it. For example, The Dušan’s Code (1349) required priests to determine if bride and groom were closely related, and marriages between persons more closely related than fourth cousins were prohibited (Figure 1). According to the Byzantine customs of the time, a widowed daughter-in-law was considered by her father-in-law to be his own blood kin. Families of three or four generations of South Slavs (“zadruga”) lived together under similar marriage and sexual restrictions, and punishment for breaking the rules was severe.

Nowadays, unions between parent and child or brother and sister, where 50% of the genome is shared, frequently result in abnormal offspring. As a result, these incestuous unions are considered illegal in most societies. An exception is that marriages between uncle and niece or aunt and nephew may be permitted in Southern India and some isolated locations. The closeness of this particular relationship is determined by Napoleonic Code (NC) III to have an Inbreeding
Coefficient F (IC) 1/8. The inbreeding coefficient F presents the probability that an individual receives two identical genes at the same locus.

Marriages between cousins are the most common types of consanguineous mating. They are covered as follow: First cousin marriage (NC IV, IC 1/16), second cousin marriage (NC VI, IC 1/64); and third cousin marriage (NC VIII, IC 1/256). In some societies marriage between cousins was acceptable, as in the Nineteenth Century England when Charles Darwin married his first cousin, Emma Wedgwood. Among first cousin unions, where 1 : 8 genes are shared, the risk of abnormal offspring is 3–5%, as compared to a risk of about 2% for a non-consanguineous union. For marriages between less closely related cousins, the risks seem little if any increased over those for the non-consanguineous population. There is little reason to discourage marriages between less closely related couples, unless they belong to highly inbred groups where heterozygosis for deleterious genes is often greatly increased. Restrictions of third and fourth cousin marriage appear to be based mainly on social and moral grounds.

Marriage at Square Two

In most civilized countries, consanguinity is the main, but not the only reason for the restrictions against marriage between close relatives. Social, moral, and religious factors influence an acceptable degree of consanguinity in many parts of the world.

In contrast to the heterosexual marriage of man and a woman, same sex marriage does not produce children, thus eliminating the dangers of inbreeding. Same sex marriage could become legal among close cousins, brothers, sisters, uncle-nephew, and aunt-nice provided that the social, moral, and religious restraints would permit. If Marcus Tallius Cicero were alive, he would certainly shout: O tempora! O mores!

Commentary

Despite current technologies for birth control, the total population of the Earth continues to increase. From time to time, man and nature reduce population growth through wars and various disasters, but such measures are insufficient. Wars, famine, and infective or parasitic diseases that spread among poor and uneducated people are disastrous means of controlling the population explosion.

Perhaps marriage without the possibility of conception, e.g., same sex marriage, could be an additional way to control reproduction. Indeed, some global strategists might push for the existing Marriage Laws to be changed accordingly. The question remains as to how well such a solution would be accepted. As of today, many individuals still consider homosexual unions as unnatural. It is thus unclear where this trend in marriage may go.

Rather than seek such a limited solution to our burgeoning population problem, we should better make efforts towards global peace, spread education to every human being, reduce inequality, and provide social and economic justice. Let us again read Dante Alighieri, the greatest poet of the Middle Ages, who suggests in Il Convivio (The Banquet) that the greatest danger to mankind comes from avarice. Wealth is not equally distributed, and the craving for it is the greatest danger to humanity. He believed he had the solution to avoiding war, but his idea unfortunately did not influence the rulers who prefer to solve problems militarily. We do hope that before long strong and creative persons will come up with a modern formula to find the best way for solution of rapidly increasing population problem—the sooner the better.

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REFERENCES

7. Available from: www.vdh.state.va.us/vital_records/marry.htm

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