

## Left-Right Political Spectrum and the Human Gene Pool

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### Abstract

Left-Right system is a well-known political spectrum apropos across the global politics. A number of social, cultural, linguistic, religious and economic attributes are identifiable in either of these two spectral extremities throughout the world. It is also widely known that intra- and inter-population heterogeneity of gene pools contributes in speciation-the split of genealogical lineage into two or more. However, a connection between Left-Right political spectra, or any political spectra for that matter, and the human gene pool remain consummately unknown. The present *ab initio* analysis reveal that the identifiable traits of left-right political spectra has strong and inherent potentials to directly affect the human gene pool to an extent to contribute in inter- and intra-population genetic heterogeneity, and, therefore, can affect processes of speciation and hybridization. The stereotypic leftist attributes can potentially result in high intra-population genetic heterogeneity, low inter-population genetic heterogeneity, and hybridization between divulging gene pools. On the other hand, rightist attributes can result in low intra-population heterogeneity, high inter-population heterogeneity, and ultimately the speciation. A plausible reason is the differential contribution of these traits towards assortative mating in human population via assortment of shared ancestry; i.e., population stratification and positive assortative mating due to homogamy. In the light of this central premise, repercussions of Left-Right political spectra on human evolution are deliberated. Argued here is that Left-Right political spectra have shared abstraction with Nurture-Nature axis of human perception. Therefore, it is plausible that Leftist and Rightist preferences are interposed by cerebral cortex and amygdala, respectively, and can very well have genetic rationale.

**Keywords:** Assortative mating; Homogamy; Hybridization; Leftism; Rightism; Speciation

### Introduction

A number of political spectral systems have been devised over time to classify the party politics of the world and to symbolize political dimensions [1]. Probably the most well-known amongst them is the Left-Right spectra that find its provenience way back in French parliamentary sitting arrangement in the immediate aftermath of the French revolution [2,3]. Although the grouping into the contrasting poles of Left-Right alignment is arbitrary and even considered outdated or artifact by some in context of social class division (for e.g. Sowell) [4], the system is widely used throughout the world [5]. There is a consensus on the shared attributes of these spectra. Amongst the most conspicuous identifiable attributes of Left wing are anti-nationalism, multi-culturalism, pro-linguistic diversity, anti-religion, egalitarianism, and constrained economy [6-8]. On the other hand, attributes of Right wing include nationalism, uniculturalism, anti-linguistic diversity, pro-religion, anti-egalitarian, and free economy [9-11].

Gene pool refers the set of all genes and its variants (alleles) in a population at any one time. The gene pool is a dynamic entity; change of which in terms of frequency of allele in a population over time, is the precise definition of evolution. The heterogeneity of the gene pool has direct effect on speciation, the formation of new species. It is well-known that decreased intra-population (within-population) genetic heterogeneity and increased inter-population (between-population) genetic heterogeneity leads to splitting of panmictic parent population into two or more assortatively mating daughter populations, the so called speciation. Forces that increase intra-population genetic heterogeneity and decrease inter-population genetic heterogeneity have negative effect in speciation. If the divulging populations allowed to inter-mix, i.e., hybridize, speciation is effectively thwarted.

While it is generally known that the structure of world politics is shaped by evolutionary processes [12,13], effect of the political spectrum on the human gene pool has never been studied. This is an important inquisition because if such a link is established, evolutionary consequences of politics can be explored, especially the speciation of human population.

### Political spectra vs. gene pool: *Ab-initio* analysis

Identifying attributes of the Left and the Right are independently assessed for any potential effect on genetic heterogeneity of human population, and conclusions were made deciding the consequence as neutral, hybridization, and speciation. Effects of all six attributes were conclusive as they unambiguously grouped into either hybridization, or speciation, depending on the political spectra (Table 1). All attributes of the Left were found to foster the hybridization between divulging gene pools, while the attributes of the Right were found to foster the speciation.

### Nationalism

Nationalism effectually constrains the human population such that the contiguous, panmictic, population is diagnosed by the nationality. Nationalism contributes in assortative mating, and, therefore, results in low intra-population genetic heterogeneity and high inter-population genetic heterogeneity-the two hallmarks of speciation. On the other hand, anti-nationalism results in dissortative mating, that result in increasing intra-population genetic heterogeneity while decreasing inter-population genetic heterogeneity-two hallmarks of hybridization.

### Culturalism

Human culture is a strong determinant for mating preference in human populations. In uniculturalism, assortative mating is effectively curtailed to the preferred cultural dimensions, which would result in low intra-population genetic heterogeneity and high inter-population genetic heterogeneity. On the other hand, multiculturalism fosters gene exchange between individuals from different cultures; i.e., the

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Attributes	Left-Wing	Effect (fosters)	Right-Wing	Effect (fosters)
Nationalism	Anti	Hybridization	Pro	Speciation
Culturalism	Multi	Hybridization	Uni	Speciation
Linguistic Diversity	Pro	Hybridization	Anti	Speciation
Religion	Anti	Hybridization	Pro	Speciation
Egalitarianism	Pro	Hybridization	Anti	Speciation
Economy	Constrained	Hybridization	Free	Speciation

**Table 1:** Effect of the attributes of left-right political spectra on the genetic heterogeneity of the human population.

hybridization. Stereotypic policies of multiculturalism, including tolerance to immigration and refugees, also contribute in the hybridization of genes between divulging gene pools.

### Linguistic diversity

Like culture, language too is a strong determinant for the mate choice. Lefts, by virtue of their pro-linguistic diversity policies, can potentially foster gene exchange between individuals of different linguistic make-ups, and therefore can result in hybridization. On the other hand, Rightist policies of anti-linguistic diversity can effectively make one or a few languages prominent in the country, preserving their identity. This results in overall low intra-population genetic heterogeneity.

### Religion

Religion and other organized doctrine systems of the world including sects and cults effectively employ a number of strategies to foment within-group mate choice and thwart between-group pairing. Because of reduced inter-religious mating, gene pools of religions will be unique, with very less intra-population variation—an efficient determinant for speciation. Leftist irreligious, atheist and agnostic policies act as an encouragement to hybridize these divulging gene pools. The outcome will be increased intra-population genetic heterogeneity, reduced inter-population genetic heterogeneity, and hybridization.

### Egalitarianism

Equality of resources through the welfare state, in principle, act against any natural section happening in the population. Coerced enforcement of policies to ensure economic equality and income redistribution will subjugate demarcation between rich and poor—the natural populations with high assortative mating. The outcome will be high intra-population variability, low inter-population variability, and hybridization for the Lefts. On the other hand, free economic policies and capitalism of Rights will cultivate the variation in order for the natural selection to act on. Difference between gene pools of rich and poor will be substantial in capitalist societies. Natural sequel would be speciation.

### Conclusion

The central premise of this study is that the traits of left-right political spectrum have in all likelihood direct effect on the genetic heterogeneity of human population. A plausible reason for this association is that most of these traits are strong determinants of assortment of shared ancestry (i.e., population stratification) and positive assortative mating due to homogamy (marriage between similar people). While rightist attributes promote population stratification and homogamy, leftist attributes promote population homogenization and negative assortative mating (mating between dissimilar persons).

A number of empirical evidences of assortative mating in human beings have been established in last decade. This includes genetic

assortative mating as revealed by the shared genome-wide SNPs (single nucleotide polymorphisms) between married couples comparing with random pairs [14]. The study found that married couples had similar genetic make-up comparing with random pairs of individuals. These results were later ascribed entirely to the population stratification [15]. Antithetically, disassortative mating was found for the MHC (major histocompatibility) genes, which control a major part of the immune system in vertebrates [16]. Persons feel more attracted to body odors of others who have different DNA sequences of MHC genes. A natural consequence of such disassortative mating is children with heterozygosity at MHC gene, rendering them immune to a wide array of antigens. Interestingly such attractions to body odors were also found associated with individual's political preference. One of the recent paper dealt with “odor of political attraction”—people from similar political affiliations find each-other's body odor more attractive than those of other politics [17,18] and these political affiliations might have an evolutionary significance as well. Religions [19] as well as languages [20] had been referred as “spandrels”, or by-products, of adaptive evolution, that evolved for reasons other than that of the adaptive evolution itself. In light of the conclusions of this study, politics can also be referred as a spandrel, or an extended phenotype [21].

As most of the attributes of rightism positively contributes in speciation, and the rightist attributes like nationalism (which is analogous to territorialism exhibited by a number of animals), unculturalism and religion creates biological ‘islands’ of assortative mating, it is inferred here that the rights reflects the nature, or the innate consequence of our “evolutionary autopilot” mode. No wonder that the concept of eugenics- selection of desirable human traits through conscious assortative mating- was advocated by extreme rights. A recent study has concluded that religious persons tend to be happier than atheists-yet another cue that the nature works in favor of religions [22]. On the contrary, the lefts conduce hybridization and reflect the nurture, or innovations. It is, therefore, argued here that the Left-Right political spectra represent Nurture-Nature axis of human preference and perception of reality, which may very well have neurological as well as genetic basis. It is apparent that the almond-shaped region in the deeper cerebral hemisphere, the amygdala, might be responsible for our rightist preferences, as this region is now deemed to be involved with natural/ancestral functions such as smell, fear, emotions, belief, instincts and so on. On the contrary, cerebral cortex might be responsible for our leftist preferences, as this region is thought to be involved with nurture/innovation functions such as reason, logic, and intelligence. It has been recently reported that the conservatives (rightists) had increased volume of the right amygdala comparing with liberals (leftists), and liberals had increased gray matter volume in the anterior cingulate cortex comparing with conservatives [23], perfectly corroborating this assumption. It would also be interesting to know the difference between male and female relative (adjusted to the body weight) volumes of these organs; as it has been much deliberated by authors such as Havelock Ellis and G Stanely Hall that women are more ‘emotional’ and ‘inclined to preserve old customs and ways of thinking’. It is very probable that women might have higher amygdala to cerebral cortex ratios, thereby enticing them towards Right political spectrum; conversely, lower amygdala to cerebral cortex ratios would render men more Leftists. There are also some indications that political attitudes are genetically transmitted from parents to offspring [24-26].

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