



COMMENTARY

**‘GENON’, THE PROGRAM FOR EXISTENCE**

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‘Sequencing is so boring that it should be done by prisoners in Jails’ said Nobel laureate Sydney Brenner<sup>1</sup>. Four letter essay writing is of no use unless and until it conveys some meaning. Boredom sequencing with ‘high-throughput, no output’<sup>1</sup> may not be the Next. The evolving concept of epigenetics<sup>2</sup> and bunch of phenomenon like Chromatin remodeling, Histone-Acetylation, Phosphorylation, Gene Silencing, Encrypted genes, Gene fusion, RNA editing, Plastome-Chondriome cross talk, Transposons, Antisense, etc. have changed the whole scenario and viewpoint of Mendelian factors so much so that many now questions the findings of expert statistician Mendel for its biological answers<sup>3</sup>. We are still unable to define the boundary of transcriptional unit. Methylomics<sup>4</sup>, Imprintomics<sup>5</sup>, and so many versions of small RNA species are forcing us to change the definition of gene<sup>6</sup>. These additional gamuts of information needed for *spatial and temporal expression of gene* have been pooled together under one umbrella of ‘Genon’, the concept proposed by Klaus Scherrer and Jürgen Jost<sup>7</sup> and initiated debate over ‘coding versus regulation’. They developed this concept of ‘Genon’ after rigorous mathematical

modeling, which deserves to be recognized by wider audience. Epigenetic regulation is one part of this larger picture genon, which covers entire fairy-tale of gene regulation. But, as like gene sequence without regulation is useless, so is regulation without interaction of environments. Hence, the concept ‘Genon’, should not be restricted to the boundaries of plasma membrane of the cell; it can be applied above the organization of tissues, organ and system. It should be at the level of individual in metazoans or even it can be at community level, because the gene regulation within cell is influenced by these hierarchal levels. No single cell of a metazoan organism can thrive in isolation. All the regulatory aspect may not be mathematically quantified. The restrictive genon does not explain socialism of honeybee or altruism of mammalians. Regulatory program genon, hence, should be for *successful struggle for existence* of that species.

We are overloaded with sequence data<sup>8</sup>. This is the high time to move from complete genome sequence to ‘complete’ understanding<sup>9</sup>. Sequence spotlights structure only but genon defines functional status and it is heritable one. Genon draws the boundary of evolutionary fitness

landscape and extremely important for evolutionary walk. Life is very adamant for its existence and evolution of gene regulation or genon is more important for survival of the species in changing environmental conditions. This program genon, if cannot evolve and adapt to changed circumstances, becomes outdated and led to extinction, for example pteridophytes among plants and dinosaurs among animals. There is big reason to worry also because 'Human genon' and genon of many others organisms may not be able to evolve at required scale under anthropogenic induced climate change.

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