TRANSDISCIPLINARY CHALLENGE IN AURORAL OVAL OF GENETICALLY CODED RESONANCES WITH NON-PHOTIC ENVIRONMENTAL CYCLES

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Infradian variations 1 Cycle in >28 hours) when ignored as secularity, lead to nonsense correlations. When evaluated, they provide information on integrative as well as adaptive bioresonances. These occur with non-photic as well as photic environmental cycles now, as they did in the past. These bioresonances are anchored in the genome. The cycles in geomagnetic, solar, galactic and/or other activity currently serve as synchronizers or influencers other than light and nutrition, rather than as causes, while they are the basis for the evolutionary coding of cycles in the first place. The spectral elements in biospheric chronomes intermodulate with physical environmental ones. This leads to rhythmically recurring and to that extent predictable opposite responses, and thus to phase response curves as feedsidewards. Feedsidewards documented in vitro for circadians and circaseptans (with a period of about 7 days) are almost certainly applicable to cycles with periods of ~0.5, ~1, ~10.5, ~21 and ~50 years. Circadecadal, circadidecadal and circaquindecadal characterize a large number of unrelated, in many cases unique time series in archived demography and physiology, including anthropometry such as neonatal weight, length, head, chest and abdominal circumference, natality, murder (over 100 years), international battles (over 2,500 years) and even religious motivation. The latter's didecadal cycle is latitude-associated in several of its parameters. A possible mechanism involved in many of these cycles is circulating melatonin. This hormone shows latitude-dependence; also during a stage of low (but not of increasing) solar activity in the circadecadal Schwabe cycle, a possible spectral variance transposition from a 1-year (sunshine-related?) to an 0.5-year (magnetism-related?) modulation of circulating melatonin by night is found. For circadecadals, a free-running natural frequency, nearly matching an environmental cycle, is difficult to study; hence, we look by other means for possible endogenous aspects, among others, by seeking proximal but non-overlapping 95% confidence intervals between possibly related cyclic chronome elements in and around us. Non-overlap of environmental and biospheric near-matches applies to an algal oxygen production cycle of about 10 years, on the one hand, and environmental near-matches in geomagnetic disturbance and solar activity during the biologic measurement span on the other hand. Conclusion. Like the photic resonances coded in our genome, namely circadians and circannuals, the non-photic ones are also genetically anchored, as documented for the biologic week by twin studies. The non-photic week, month and half-year and the decadal and multidecadal rhythms await mapping (chronomics) in the auroral region by comparison with to their counterparts at lower latitudes. The characteristics of these cyclic past and present genetically coded resonances constitute potential endpoints not only for a better understanding of bioeffects. They also demonstrate, for "pure" physicists, putative albeit multifactorial effects on earth of the physics on the sun, such as of the Hale cycle of about 21.5 years. The biosphere, its economics, wars, crime, broader demography and even religious motivation, apart from any human interest. can become endpoints for pure physics, suggesting effects on earth possibly not detected by purely physical variables on earth.