

Can Diet and Lifestyle Factors and Geomagnetic Forces Predispose Aggression?

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Abstract: Geomagnetic forces such as solar activity do predict societal unrests. On the other hand, socio-environmental factors including diet, physical and mental activities, tobacco and alcohol consumption predict risks of developing inflammatory degenerative chronic diseases. Socio-political turmoil, possibly extending to terrorism, should seek rest in the prevention of those ramping diseases. Re-balancing tissue omega-6/3 fatty acids through diet, in conjunction with regular practice of meditation, pranayam and yogan, do improve resistance to chronic ill-health affecting body and mind. At large and term, good physical, mental, spiritual and social health can possibly counteract geomagnetic forces and help avoiding conflicts among populations and subpopulation groups.

Keywords: Homo *economicus*, body & mind health, tissue inflammation, geomagnetic forces.

INTRODUCTION

Hippocrates wrote "Positive health requires a knowledge of man's primary constitution (which today we call genetics) and of the powers of various foods, both those natural to them and those resulting from human skill (today's processed food). But eating alone is not enough for health. There must also be exercise, of which the effects must likewise be known. The combination of these two things makes regimen, when proper attention is given to the season of the year, the changes of the winds, the age of the individual and the situation of his home. If there is any deficiency in food or exercise the body will fall sick.' (5th century BC)". Since Hippocrates, diet and lifestyle have been scrutinized for their influence on psychosomatic health with particular attention over the past years to the role of omega-3 fatty acids at tissue level [1-6]. Other recent evidence suggest that geomagnetic forces, solar activity and magnetic storms, can also predispose human to non-communicable diseases, including myocardial infarction, stroke, sudden cardiac death, aggression, depression and hyperactivity anxiety disorders [7-10].

The terrorist attacks in the United States, the United Kingdom, Spain and India of the last 10 years as well as the socio-politico-military responses that they have engendered all appear body-mind expression of rampant chronic degenerative diseases at time of high solar activities. It is most probable that the causes for violence, including terrorism and wars, have a unifying hypothesis, which lies in the environment that is known to have definite influence on the physical, mental, spiritual and social health of Homo *economicus* and their populations. In the present viewpoint,

we review the available evidence about the association of biosphere forces with occurrence of terrorism and wars, and the role of nutritional factors known to influence behavior.

Increasing security measures to prevent violence did not pass the test of time as a remedy. Improving body-mind health appears a far more promising call to the threat.

BIOSPHERE FORCES

The cycles of biospheric processes may be divided into photic and non-photoc cycles in line with the nature of environmental processes associated with them, ie. electromagnetic radiation in the visible and non-visible frequency ranges, sun and space corpuscular emissions, geomagnetism, gravitation [11-18]. These cycles interfere with each other to the extent that their manifestation can at time be detected as separate or composite entities of varying amplitude or disappear in background noise over a definite range of the spectrum. Non-stationary behavior, a peculiar characteristic of solar wind velocities, is referred to as Aeolian; the BEL cycle known after its inventors Bruckner, Egeson & Lockyer has a duration of 30-40 years [11].

In their meta-analyses of data related to biosphere processes, Halberg and co-workers from the Halberg Chronobiology Center, University of Minnesota, MN, USA, have pointed out that the BEL cycle revolves with the same frequency as the largest peaks in the spectrum of the South English Price Index, thereby suggesting a predictable association with multiple manifestations of natural processes, logically including economic, political and military time series [7, 13]. A transtridecadal component was also found in political and military affairs over 2556 years of international battles [14,15]. The estimates for the BEL cycle (30.74 & 37.16 years in Figs. 1 & 2) are considerably different from one another as well as from the estimates obtained with other

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data in different studies [11-18]. This can be related to the Aeolian character of the cycle and the use of data related to different time intervals. In line with the results obtained, an almost 35 year cycle was detected in the times series of the incidence of auroras. The total period of the time series was 900 years (1001-1900). The first 500 years were characterized by a significantly decreased incidence in comparison with the later period, which seems to be caused by technological advances in observing and recording auroras. However, both spectra were found to have components with a period of around 30 years. Analyses of those time-series data identify solar cycles of periods of ~70-100 years (Figs. 1 & 2) According to available data, temperature variations at that time were observed to be cyclic with a period of around 36.8, 34.36 and 37.37 years, as calculated by Halberg and co-workers [7, 13]. Similar signatures are reported herein in human affairs relating to major problems of our day. Therefore, cycles need to be further explored with respect not only to climate change, but also to globally failing economies; aggression; and other military and political affairs, including terrorism. There is a further need to re-explore physical, social, mental and spiritual health in the light of various environmental factors such as solar activity, diet, lifestyle, meditation, because these factors can influence mind-body connections, leading to wrong political and military decisions.

In the chronomics study [19], Fabien and co-workers are studying the effect of w-3 fatty acids on vascular variability disorders and neuropsychiatric functions by 12 week ambulatory blood pressure and heart rate monitoring and assessment of memory function, depression and aggression. [19].

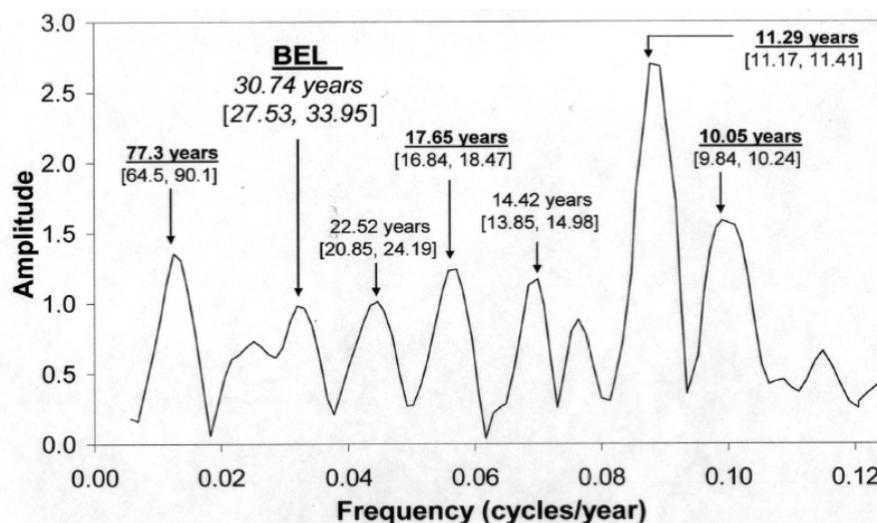
Quickly eaten and absorbed processed foods, rich in refined carbohydrates and ω6 fats tainted with trans fat isomers, are known to cause hyper-glycemia / -lipidemia

(incl. overproduction of free fatty acids) and oxidative stress (incl. overproduction of superoxide anion), all leading in cascade to accumulation of pro-inflammatory cytokines in blood and peripheral tissues [5, 6]. Under normal conditions, these cytokines, ie. interleukin-6 (IL-6), tumor necrosis factor-alpha (TNF-α), act in association with free radicals to protect the body against environmental stress; when over-produced, they do in fact amplify the resulting strain, damaging tissues, eventually affecting gene expression [20]. Tissue inflammation and resulting physiological pain translates into enhanced irritability, aggressive and/or depressive mood, and precipitates chronic degenerative diseases [6-10].

SOLAR ACTIVITY, MAY ALSO DAMAGE THE GENES

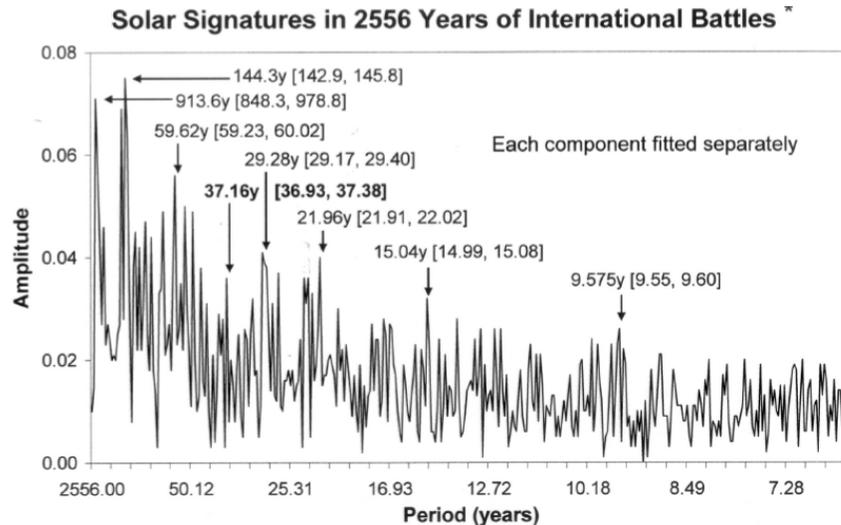
There may be more to evolution than survival of the fittest, namely the interaction of environmental cycles with those that we mimic. Actually, Halberg and co-workers demonstrated non-photic influences on mitosis (rather close to effects upon DNA) that have been studied by physicists [21].

The point of this paper is that terrorism and war are manifestations of poor mental and spiritual health which have common roots in space, weather, nutrition and biological systems of our body, that have to be explored with respect to its biotic signatures. This could be done by a generally available Internet based prophylactic health care system focusing predominantly fare rather than in hospitals and caregivers' offices, as long as it results in good health. The benefits of this system as a source for monitoring solar dynamics or vascular variability disorders or tissue w-6/w-3 ratio in body systems, may be as important as its role in health care demonstrated in the chronomics study [1, 19]. We should avoid to "fly blind" either with respect to risk and diseases of individuals or to those of populations.



*Original data stemming from Alexander Leonidovich Chizhevsky, analyzed by linear least-squares spectrum, complemented by nonlinear point and 95% confidence interval (in []) estimates of each component assessed separately. Meta-analyses from Halberg Chronobiology Center, University of Minnesota, Minneapolis. © Halberg.

Fig. (1). Periods (ts) of solar activity cycles-gleissberg, of about (~) 70 to 100 years (y), Bruckner of ~33 y, hale of ~22 y, markov of ~17 y, and schwabe of ~10 to 11 y all reflected in military and political activity.



* Analysis after detrending with second-order polynomial of \log_{10} -transformed data
From Dewey ER. Evidence of cyclic patterns in an index of international battles, 600 BC - AD 1957. Cycles 1970; 21: 121-158.

Meta-analyses from Halberg Chronobiology Center, University of Minnesota, Minneapolis. © Halberg.

Fig. (2). Solar signatures in 2556 years of international battles.

At first, the BEL cycle meant a 95% confidence interval of a period covering 30–40 years even if the point estimate for the period value was beyond this interval. The wide limits of confidence intervals are conditioned by the variability and uncertainty of the BEL cycle, as well as by the fact that existing time series of physiological and satellite data have shorter periods. Therefore, biologists and clinicians will find its signature in the human heart rate, blood pressures and cardiac functioning as well as in neuronal and psychological functioning. However, there may be multiple confounders related to dietary factors, tissue w-6/w-3 ratio and personality traits, which may enhance the susceptibility of individuals involved in making political and military decisions as well as decisions for terrorism. An underlying low status of mental and spiritual health can further increase the susceptibility of these individuals to magnetic storms resulting in to decisions, leading to terrorism and war. The September 11, 2001 terrorist attack and resulting decisions of war against terrorism may be due to presence of solar cycles and trans year in 2000-2001 [1-4] as well as due to other environmental risk factors [5-10] among individuals taking such decisions.

This is easily seen from [1] where the transtridecadal BEL cycle of 36.27 years with a 95% confidence interval extending from 35.60 to 36.99 years is certainly distinct from the Kondratieff cycle of around 50 years, which in our analyses has an uncertainty (confidence interval) of 48.4–50.9 years (ref 1) shows time plots of the BEL cycle and Kondratieff cycle with a period of around 49.7 years. The estimates were conducted by fitting a cosine curve with the given period of 110.1 (with a step of 3.63 years) or 149.0 (with a step of 4.97 years) years. In both cases the timing of high values (acrophase) shows stability when the zero amplitude (no_rhythm) hypothesis is rejected.

Since, major changes in the diet and lifestyle have occurred only in the last 100 years after 1910, hence solar activity

appears to be an independent predictor of increased incidence of wars before this period. The role of low w-6/w-3 ratio diet in the prevention of psychological disorders and chronic diseases has been confirmed in several studies [1-5, 22-25]. Therefore, for prevention of aggression, depression and other chronic diseases, eat Mediterranean foods, Indo-Mediterranean foods and Japanese diet which are now available in every country but at higher cost.

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CONFLICT OF INTEREST

There is no conflict of interest among authors.

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