Nanomolecular Gravitational Interactions Causing Increased Probability of Birth Defects in Humans During Period from Conception to Early Fetus Formation

Induced change in centriole separation and consequent probability for disadvantageous mutation

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ABSTRACT

It is found that small decreases in gravity that are caused by planet syzygy, full moon presence, and cosmogonic events of deep space can cause a sufficient change in gravitational interactions to affect the nucleons of a single cell or a small nanocluster of cells after initial mitosis such that small but significant changes in normal centriole separation can occur. These slight modifications can cause modifications in bond lengths and bond angles of sheathing water molecules, and changes of the helical DNA structure, and lead to a mutation with adverse consequences.

Key words: centrioles, nanoclusters, mutation, sheathing water, gravity, cosmogonic

1 Introduction

1.1 Cellular Systems

Recent work employing sea urgin eggs and embryos has shown that the centriole-centrosome complex is altered during cell division when exposed to microgravity, however, control cells cultured in a centrifuge at 1g in space, and those cultured on ground appear normal [1]. It was reported that the separation of centrioles were observed most significantly in 4% of the cells that were exposed to microgravity [1]. Sea urchins were employed for this study because of their constituting an animal model system which is ideal for the study of molecular, cell, and developmental biology [2,3]. Experiments have also been recently conducted in microgravity using ceratopteris [4] and indicated that *only* as a **single-celled** spore did the organism appear to respond to gravity. It was also shown therein that gravity detection takes place *only* during a very crucial time which allows the effect to influence subsequent cell polarity, cell differentiation, direction of nuclear migration, and direction of rhizoid growth – this time period being referred to as the "polarity-determination window". The response is observed to be that the nucleus migrates down to the bottom of the front face of the spore to position itself for an asymmetric division. The two consequent daughter cells are not of equal size, and the larger becomes the prothallus (upward growing aerial part) whereas the smaller becomes the rhizoid; the nuclear migration positions the *first* cell division such that the rhizoid grows downward.

The ceratopteris work relates to the micro-current studies conducted by Levengood and Gedye [5,6] on impatiens and soybean plants in which gravitationally polartropic electrical effects are measured by a charge density pulse capacitive technique. Their work also shows that a gravitropic relationship is affected by the position of the Sun.

1.2 Botanical systems

The above effects, though of small magnitude, can have profound consequences, and fall under what is becoming to be known under the general category of "subtle energy effects". We have measured [7] a very close correlation of enhanced growth/height of the extremity of a parabolic cactus shoot corresponding to the time interval of 99% to 100% visibility of the full moon of August 3rd-5th, 2001 (a period of a slight decrease in gravity), and we have measured a slight *decrease* in height during the new moon (increased gravity) a fortnight subsequent (heights measured vertically with respect to a ground plane) – the effects being of the order of 1-2 %. This study was performed to investigate the geotropism and geotaxy of a life science system in order to correlate with predictions of our own external particle model for gravity [8-10].
We have corroborated subtle gravitational effects in our study of the heavy vine, Aristolochia

macrophylla (known as Ducthman's Pipe because of the pipe-like structure of its calyx) by mapping the position of the tip of a cordate leaf correlated with the position of the Sun passing directly over the plane of support-fence of the vine [7,11]. This work showed a small decrease in the effect of gravity during the tine interval of 10:00 AM to 2:00 PM (EST) in experiments on cloudless days in August 2001, the effect observed consistently to be about 2%..

1.3 Macroscopic biological systems

Modern research has shown that Human chorionic gonadotropin (HCG), secreted by the human embryo, begins to circulate in maternal blood very early in pregnancy, and established [12] that HCG is concentrated and excreted in maternal urine. The HCG hormone is actually secreted by the embryonic chorionic villi cells *almost from the* ***momen****t of conception,* and should be initially susceptible to gravitational effects. The very correlation of the average typical menstrual cycle and gestation period in humans with the lunar month(s), and the development of the normal monthly corpus luteum cyst on the ovary (alerted to function by a signal from the pituitary gland), suggest from a physics standpoint some complex gravitational correlation. Additional recent research, aimed at decreasing the probability of premature births, has shown that as an expectant mother approaches delivery, a series of *electrical signals* take place in the womb that cause muscle contraction [13]. This effect and much of the above phenomena may be a result of subtle changes in the overall thermodynamic environment to which sheathing water molecule clusters are exposed, and a compliant response of the structure of the water molecule and cluster to that physical and/or chemical perturbation/alteration. This viewpoint is borne out by recent measurements giving the change in the bond length of the water molecule as a function of very small changes in temperature and pressure [14], as well as indications of changes in the resistivity of water depending upon angle of the charge flow path vertical gravity vector [7,12,14].

2 Theory an experiment

We have shown [8] that for an external momenta-transfer theory of gravity, what was thought in Newtonian theory to be the universal gravitational constant, G, is actually a function of gravity-bearing particle flux density, and postulated that the external particle which is responsible for gravitational interactions may be the electron neutrino. We have reported experimental support for G being a function by showing that gravitational interactions depend upon the temperature, shape, phase, and level of disorder of a mass [9.10]. Much of our work that relates to life sciences has focused on the gravitational properties of water [14a]. The water that exists inside living cell cytoplasm changes between phases of disordered liquid and ordered gelatinous solid, the fluctuation between the two phases determined by the polymerization of the actin cytoskeleton [16]. Water in a microtubule environment will respond to subtle energy gravitational effects[5,6,14]. In that water is within and around DNA/protein molecules the gravitational effects then become very important relative to diffusion and life processes. In addition to direct hydrogen bonds between protein and DNA there are water bridges that exist in virtually all complexes. Nano-clustering of water molecules can range from five or so as sheathing molecules to 57 molecules of water bound to a DNA fragment of 19 base pairs length [16]. Subtle changes in gravity will effectuate slight changes in pressure, as well as in the overall pressure tensor, and cause consequent changes in the bond angle of water from its normally established value of 104-degrees 27-minutes to an altered value which will consequently alter hydrogen bonding with proteins. This alteration will have a polarization-induced dipole-dipole effect on the polymeric structure and electrical properties of the protein and of nerve cells and synapse responses.

We have reported [9.10] that at length scales of less than 0.1 mm, gravitational properties do not behave according to inverse square relationship, but appear to conform to an inverse fourth relationship. This has been predicted by string physicists [17] who had reported that at less than 0.1 mm proximity new and extraordinary physical behavior may be observed. (The value of 0.1 mm corresponds to the length scale that gives rise to Einstein's cosmological constant). Our experiments also indicated that gravity has a statistical property unlike the expected behavior of a time-independent field [9,10]. The apparatus which we utilized to measure very small effects of gravity is described in ref 9. We tested this apparatus by measuring a decrease in gravity at the time of the May 2001 Sun-planet syzygy of the line-up of the Sun, Earth, Jupiter,

and Saturn, predicted at 2203 (UT) on May 18,'01. A cusp-like decrease in gravity was observed in our study on the morning of May 15th between the hours of 0100 and 0500, and a square dip in gravity was detected at 2010 UT on May 18th lasting 35 seconds. A major anomaly was also detected in a charge-density-pulse array [15,5,6] in early morning hours of May 15th.

3 Calculations and Simulations

On the above basis, simulations and calculations indicate that the change in centriole-centriole separation due to the decreased gravity of a full moon interval (during which decreased gravity effects would be maximized) is of the order of tens of angstroms. This variation in length scale is shown to alter the probability of reaching the activation energy to form a covalent bond in an emerging DNA helix, and create the possibility of a change in bond angle, bond length, and the elements entering the bond. Because of the modified chemical potential the effect on phosphorus bridging atoms is significant. The probability then of a miscopy in replication during mitosis will be enhanced by at least 10 per cent, and thus the probability of a disadvantageous mutation leading to a birth defect will likewise increase.

Through the use of the Benard cell, it is reported [18] that nonequilibrium magnifies the effects of gravitation. The cell has a very small thickness of only a few millimeters and is utilized to show that at non-equilibrium gravitation will modify diffusion flow. Detailed calculations using the reaction diffusion equation show that gravitation-induced changes in diffusion are clearly shown near the bifurcation point of an unperturbed system. The authors conclude that "very small gravitational fields can lead to pattern selection." This result [18] is entirely in accord with the results of our simulations on cellular nanoclusters.

The above is expected also to be particularly true during a chemical or a biochemical reaction during which bonding is breaking down and then new chemical bonding is being reconstructed. Under these transient conditions, the species is most susceptible to external stimuli. We have shown this thermodynamically (and through catalysis) during liquid-liquid short-range-order transitions in many molten elemental states to include sulfur, selenium, tellurium, lead, bismuth, tin, and mercury [19]. We reported in those studies that short range order structural configurations become stable or persistently metastable. It is reasonable to expect that during the reconstruction of the thermodynamically favored species, such as in polymer formation, there would exist a preferentially high vulnerability to gravitation and magnetic influences during this transient interval.

4 Inferences and Further Work

We have endeavored to sensitize particularly medical field researchers, consultants, and practitioners regarding the consideration of gravitational (and electromagnetic) interactions during transient periods of molecular bonding emphasizing very early fetus development (as well as during the biochemical processes of healing and joining). Subtle gravitational and magnetic changes can be caused by lunar, planetary, and deep space supernovae effecfts. Data relating birth defects to syzygy effects have been compiled by Gedye from the work of Jones over a period of 30 years (2). It is strongly recommended from the simulations and calculations described herein that more experimental research be conducted on early embryo formation during variation of overall thermodynamic conditions. We have recently found indication of cosmogonic phenomena possibly affecting weak force interactions, and recommend also that experimental work in this sub-area be continued [21] as related to unstable nuclides in organic systems.

References:

[1] H. Schatten, and A. Chakrabarti, Proc ASGSB10, 10-15, 1996.

[2] A. Chakrabaarti, A. Stoecker and H. Schatten, AIAA –95-1059 (1995) 1-10.

[3] H. Schatten, Cell Motil. Cytoskel. 27 (1994), 59-68.

[4] R. Roux, internet communication

[5] W. Levengood and J. Gedye Subtle Energies and Energy Medicine 8(1), 33-54.

[6] J. Gedye., Zygotron Corporation, private communication (2001).

[7] G. C. Vezzoli, Aristolochia Macrophylla and bridging/sheathing water nanoclusters, Technical Report, Harvard University Herbaria Library (2001).

[8] Los Alamos National Laboratories xxx.lanl.gov/abs/astro-ph/0102109.

[9] Ibid. web site xxx.lanl.gov/abs/physics/0104018.

[10] G. C. Vezzoli, Materials Research Innovations (in press).

[11] G. C. Vezzoli and J. Gedye, NY Botanical Gardens Seminar 8, 27, 01.

[12] C. Gillespie, *Your Pregnancy Month by Month*, Harper Perennial Harper-Collins 3-7, 1988.

[13] Internet communication. Emily Morgan (london)

[14] a) G. C. Vezzoli, .submitted to *Infinite Energy Magazine;* b) internet communication on hydrated calcium sulfate R.L. Isis, United Kingdom.

[15] C. Plyer, Charge Density Pulse Net, North Carolina, private communications.

[16] Ji-Chen. L. see Niels,W@umist.ac.uk phy.umist.ac.uk/PostGraduate//Brochure/condens.shtml

[17] C. D. Hoyle, U. Schmidt, B.R. Heckel, E. G. Adelberger, J. H. Gundlach, D. J. Kapner, and H.E. Swanson, Phys. Rev. Lett. 86 (8), 1418-1421, 2001.

[18]] See "Order Out of Chaos" by Ilya Prigogine (Chemistry Nobel Laureate 1977) and Isabell Stenger (1984) Web Publications Graphics, Australia. and P. Brown private communication (New South Wales).

[19] G. C. Vezzoli, F. Dachille, and R.Roy, J. Polym. Sci., Pt A-1 (7), 1557-1566, 1969 and Inorg. Chem 8, 2658-2661 1969.
G.C. Vezzoli, High Temp High Pres 12, 195-201 1980, also Phys.Stat Sol (a) 46, k49-50, 1978, and (a) 48, K 75-75, 1978; G. C. Vezzoli , L. W. Doremus, and P. J. Walsh, Phys Stat. Sol (a) 32 683-698, 1975, and Appl Optics 16, 433-437 1977; G. C. Vezzoli, Mat. Res. Bull. 23, 1-10, 1988; G. C. Vezzoli, P. W. Kisatsky, L.W. Doremus, and P. J. Walsh, Appl Optics 15(2), 86-98 1976.

[20] J. Gedye, Zygotron, private communication.

[21] G.C. Vezzoli and M. Talukdere (unpublished) see Yahoo cycles groups archives scientific commentary.
S. Shnol' et al. Uspekhi 43 (2), 205-209, 2000; and Uspekhi 41 (10) 1025-1035, 1998.
See also A. Kies et al. Il Nuovo Cimento 22C, n. 3-4 , May-Aug 1999 (radon outgassing related to Earth's tides).

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