

CHAPTER 3: SCIENTIFIC LITERATURE REVIEW

Rates of biological processes are well recognized to vary with time on various times scales: daily (Koukkari & Sothern, 2007a), lunar month (Koukkari & Sothern, 2007b), seasonally (Sharma, 1981) and annually (Koukkari & Sothern, 2007c). Such biorhythms were recognized in ancient times and described prominently in Ayurveda (Valiathan, 2010; Sharma, 1981). Naturally occurring biorhythms can cause variations in the output of growth experiments. Therefore, *Jyotisha Muhurtha* predictions must be clearly stated to be independent of biorhythms, as experimental variations may be caused by biorhythms. The Experimental design excluded these as possible explanations, as explained below. This thesis demonstrates that ‘starting time effects’ exist in many biological processes, possibly due to changes they make on metabolism.

3.1 STARTING TIME EFFECTS

Microbiological processes are well recognized to exhibit great variability. Such unpredictable variations offer a great challenge to researchers. To explain the unpredictability, cellular processes have been proposed to be subject to large variances in reaction rates due to variations in the speed of protein synthesis (Elowitz, 2002), reactions involving ‘Small numbers of Big Molecules’ (Federoff & Fontana, 2002). But these explanations fall short of providing convincing evidence to the inter-day variations observed in microbial growth experiments (see below).

3.2 MEDICAL ASTROLOGY RESEARCH

Srilakshmi et al. in their pioneering work have scientifically tested the potential role of *Jyotisha* in predicting the health status or disease outcomes in individuals. (Srilakshmi et al., 2011a; Srilakshmi et al., 2011b; Srilakshmi T. & Reddy L.J., 2013). In each study the

researchers assessed frequency of occurrence of afflictions attributable to particular *grahas* in patients with specific pathologies by comparing them with frequencies of occurrence in control groups and found a positive correlation with influence of *grahas* with afflictions. Compilation of Srilakshmi's objective research, (given in Table 3.1 at end), based on retrospective data found that it obeys the "law of comparative judgement" (Thurstone, 1927) and the group further postulated and laid down rules for such kind of *Jyotisha* based research, through comparisons of kundalis and afflictions of individuals. The general rules are as follows: **a) it does not pretend to give an accurate prediction, only tendencies; b) it fits well with a system that regards pathology as having multiple possible causes; c) failure to observe a connection does not constitute a failure of the system; d) it allows timing of tendencies for different diseases to be specifically predicted, implying that the degree of affliction of each planet and possible neutralizing factors can both be quantitatively calculated in *Jyotisha*.**

3.3 PREVIOUS WORK AT S-VYASA

Description of Rameshrao's work at S-VYASA Yoga deemed to be university (Rao et al., 2013a; Rao et al., 2013b; Rao et al., 2014) is given in the Introduction section; some salient findings from the pioneering work are listed here. Rameshrao et al. started with studying the vaccination efficiency in goats and sheep by comparing vaccinations done during *Dhanur Lagna* with *Guru* present and during *Makara Lagna* ruled by *Sani* and found that the efficiency was consistently reduced in the later *muhurta*. Further experiments included *Rāhukāla*; which rendered all vaccinations unsuccessful.

Next, a series of vaccine production experiments conducted at the Institute for Animal Health & Veterinary Biology (IAH&VB) in Bangalore, chose *Muhurta* as time of flask inoculation. The experiments tested the influence of *Jyotisha grahas* on microbial growth: consistent results found *Guru*'s influence to increase bacterial production; virus infection of

cells decreased; *Rähu*'s effect was opposite: reduced bacterial production and increased virus propagation (Rao et al., 2013a). Unanticipated results also obtained: strong *Chandra* protected cells from *Rähu*, enhancing bacterial growth (Rameshrao & Hankey, 2019). The results shed light on variability in growth rates: *Lagna Muhürtas* of *Guru*, *Chandra* and *Rähu*, explain over 70% of variance. Conclusion: *Guru*, *Chandra*, *Sani* and *Rahu* influence the biological processes, vaccination, cell growth and virus propagation (Rao et al., 2014; Rao et al., 2013a; Rao et al., 2013b; Rao et al., 2013c; Hankey & Rao, 2013).

Continuing with experiments on grahas influence on growth, Rao et al. repeated the growth experiments with microorganism during Eclipses. (Rao et al., 2013a; Rameshrao & Hankey, 2019, chapter 6). Two eclipses in 2012, and one in 2013 found virus propagation increased more than by *Rahu*'s influence. Identical experimental protocols made the combined results more decisive, confirming the *Jyotisha* predictions that eclipse times are more malefic than *Rahu* (Santhanam, 1984, chapter 9; Rao et al., 2014).

It is acknowledged that there are other variables that can also cause residual variations in growth of microorganisms grown in laboratory conditions like, 1) temperature, 2) pH, 3) growth media composition changing from batch to batch, 4) initial inoculant concentration and 5) biorhythms. OIE is the WTO reference organization for standards relating to animal health and zoonoses. OIE protocols optimize the first four, but output variations are seen to be still remaining large. However, the last of the above five factors viz., Biorhythms produce variations in disease outbreaks with age, gender and season, and alter vaccine production & uptake (Gallagher, S. et al., 2008; Fortier E.E. et al., 2011; Long J.E. et al., 2016). *But growth periods of 24 hour multiples, amounting to more than one day or even more do not result in output variations.*

3.4 FUTURE SCOPE

Research studies on Jyotisha are beginning to provide scientific validation to the principles and aphorisms of Jyotisha. One of that is that Jyotisha's effects on biological phenomena pervade all life. There is immense scope for further more controlled studies to dig deeper into the influence of Astrology, one for example is to investigate whether the changes seen in gross growth parameters have a decipherable corresponding change at the level of molecular processes like metabolism, gene expression, translation of protein etc. This line of thought has the potential even to be developed into new area of inquiry combining physics, astrophysics and biology. Quantum physics and Complexity biology appear to prove to be real sources for developing a physical theory for Jyotisha and its allied branches like Vastu sastra.

Title of paper	Statistical test	Details of Sample	Statistics reported
Kapha Planets & Polycystic Ovarian Syndrome	Chi-square Fisher Exact test	Female-Patients 60 & healthy 30 (w/o similar..)	P<0.001(O.R.=11.45) & P=0.027(O.R.=5.00)
Afflictions by Mrityu bhaga Gandanta degree	--	100 out of 1000	Mean age Bar diagram
Retrograde planets & Endometriosis	Chi-square Fishers Exact test	85 female patients & 45 healthy women	P = 0.004(O.R.=3.04)
Role of Kuja & Sani in Asthma	Pearson's Chi-squared test with continuity correction	(30+30)=60 Asthmatics & 40 healthy as control	P<0.001(O.R.=2.718) & (C.I. 1,723,4.288)
Sani <i>Dasa-Bhuktis</i> & Lower limb amputations	28.5% Sani-Dasa & 17% Sani Bhukti	200	--
Afflicted Sun in auto immune arthritis	Pearson's Chi-squares	90 (59 F+ 31 M) 50 (32 F+18 M)	P<0.001
Planetary combinations for caesarean section with breech presentation	Chi-square test	100 babies' C-section And 100 babies by Normal delivery	P<0.001
Seventh house afflictions and renal failure	Pearson's Chi-squared test	60 patients 30 healthy	P<0.0001(O.R.=15.6, at 95% C.I.
Predicting Schizophrenic: astrological perspectives	Chi-square / Fisher Exact test	60 patients and 60 healthy participants	P<0.050 OR=2.74 (Moon-Mercury) & p<0.001