



Temperature Fluctuation and Human Geniuses – A Hidden Nexus in Human Evolution

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Abstract: The theory of evolution by natural selection formed the foundation of studies on the progression of life and its existence. However, it has ignored temperature fluctuation, which has played a key role in developing human intelligence and genius. A genius displays exceptional intellect and creative capabilities that significantly exceed average intelligence. No less accurate is the fact that intelligence and inventiveness have been built into human brains since the evolution of sensory organs and their link to the brain over a long path of human ancestry. Physiological changes, including bipedalism in our ancestor lineages, are the intended result of in-body genetic mutation guided by the brain. Fluctuating temperatures and changing environments are the key catalysts cum ingredients for brain awareness, intelligence, and genius. The exact Paleoclimate is not precisely known. So, temperature and precipitation data from 77 locations in recent years were gathered and analysed, and conclusions were drawn. Notwithstanding the data present series, the daily, monthly, and yearly temperature fluctuation and their ratios from one zone to another have satisfactorily supported the hypothesis that temperature fluctuation is linked with human genius and its development through all evolutionary lineages.

Keywords: Temperature, Fluctuation, Evolution, Automation, Bipedalism, Genius.

Introduction

Human intelligence is a mental quality that consists of learning from experience, adapting to new situations, understanding and handling abstract concepts, and using knowledge to manipulate one's environment (Sternberg 2022). In other words, human intelligence is the intellectual capability of humans, which is marked by complex cognitive feats and high levels of motivation and self-awareness. Intelligence

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is a perception described in many ways as the capacity for logic, understanding, self-awareness (Ashley and Reiter-Palmon, 2012), learning, emotional knowledge (Emotional_intelligence n.d.), reasoning, planning, creativity (Creativity (n.d.)), critical thinking (Critical thinking (n.d.)), and problem-solving (Intelligence 2021). Intelligence is linked with memory and processing speed. Intelligence can be habitually developed through education, learning, and exposure to intellectual challenges (Wikipedia, n.d.). Intelligence is characteristically measured through IQ tests and is considered a fundamental aspect of human cognitive abilities. In the 1990s, Turkheimer studied the effects of socioeconomic status and genes on IQ, especially regarding gene-environment interactions (Eric-Turkheimer n.d.). He demonstrated that genes' role becomes significantly weaker in determining IQ in a child in severely poor conditions like poverty, hunger, and illness, and genes become significant for IQ only when such conditions are removed.

The terms 'Genius' and 'Intelligent' carry distinct meanings and implications in human evolution. A genius (Genius (n.d.)) displays exceptional intellect and creative capabilities that significantly exceed the average intelligence. It incorporates outstanding creativity, originality, and innovation. Extraordinary insights, breakthrough inventions, and tactical innovations in problem-solving exemplify it. It generally appears in specific domains or disciplines, like health literature, mathematics, natural science, biological science, social science, etc., where one invents and innovates that contribute extraordinarily. Genius cannot be easily quantified and predicted. Genius is often innate and cannot be easily taught or acquired. A rare combination of natural talent, creativity, and passion sets geniuses apart. While intelligence can be cultivated and expanded, genius is often characterised by a singular brilliance that sets individuals apart from their peers. Genius is beyond mere intelligence.

Though there can be different opinions on some inherited behaviours, it cannot be refuted that a child born in the current era owns more intelligence and ideas than a child of a hominid born in ancient eras (Mukherjee 2017) (Sternberg and Rodríguez-Fernández, n.d.). No less accurate is the fact that intelligence and inventiveness have been built into the human brain since the evolution of sensory organs like eyes, nose, ears, tongue, and skin and their linking system to the brain over a long path of human ancestry (Bhusal 2022). The exact climate between 100 and 65 million years ago (Manger 2023), their Paleotemperature ranges, and daily and yearly fluctuations are unknown. Based on data from the modern era, temperature fluctuations in the low elevation cities and water bodies in the current tropical zone, the author has argued that the temperature ranges and their fluctuations between 100 – 65 million years ago

in the tropical zones would have become favourable towards the hominid ancestors' gene germination and evolution onwards.

Charles Darwin's 'scientific theory of evolution by natural selection'(1859) formed the foundation of modern studies on the progression of life and their existence (Wikipedia (n.d). Galton (1869, 2012) did pioneering research on Eugene. Neither could identify that temperature fluctuation has played a key role in initiating and developing human intelligence and genius. Temperature fluctuation results from the global climate's dynamicity (DH-Debate 2022). This research found that human lineages' physical and mental evolution had been bestowed with environmental change—the optimum climate fluctuations over time, including cooling and warming, drying and wetting. The changing climate has slowly affected the human brain, resulting in behavioural changes. Dr Rick Potts (Smithsonian Institution, 2018) postulated that human adaptations had evolved in response to environmental instability. The temperature-genius nexus argues that the evolution of human intellect is closely coupled with climate fluctuation, resulting in the evolution of the human brain and its automation. Genius's mind (brain) keeps understanding the process underlying things and events until it gets an answer, makes discoveries, and corrects unrealistic, fake hypotheses.

Research Hypothesis and Objectives

Some pertinent background questions to be answered in linking the genius with fluctuating temperature are: At which stage did human ancestors begin recognising the cyclic nature of seasons, such as cool, warm, and hot seasons? Which stage started keeping a record in memories of the annual variation in climates, the recurring time of calm and the coldest seasons, and the warm and the hottest seasons in a year cycle? How did human ancestors transfer lessons and experiences to their offspring at various stages, such as the four-footed and bipedal stages? There are no specific answers, even on proxy data. Even though there are no exact timelines, hominid ancestors realised the changes in local climates, which forced them to find ways to survive and search and find newer and newer places/regions to migrate/ settle for survival and better livelihood (Howerth 1917). Like other living creatures, human ancestors were protected by body hair. However, when they needed to cover their body to protect themselves from the cold, the heat, the rain, insect bites, etc., they began wearing plant leaves, animal skin, and modern garments. It is a fact that the moment from the womb to being out, a healthy newborn experiences/ feels the first is the temperature differences. The birth moment and the infancy are the paradigm shift for the newborn. The fluctuating

temperature has played a vital role in awakening the brain and promoting human intelligence since its existence throughout evolution.

The dynamic behaviour of celestial bodies, especially the Sun and the Earth, causes temperature fluctuations. One of the oldest species in the human family tree, *Sahelanthropus tchadensis*, was found in West-Central Africa (Chad) in 2001 (*Sahelanthropus tchadensis*, n.d.). This species was alive between 7 and 6 million years ago (pinterest.com (n.d.)). Prosimian fossils discovered in this region are between 50 and 55 million years old (Napier and Napier 1985). It isn't easy to pinpoint the precise climates and Paleotemperature ranges between 100 and 50 million years ago. The idea that intelligence and creativity have been ingrained in human brains since the development of sensory organs and their connection to the brain across a lengthy line of human ancestry is equally correct. Both intelligence and geniuses have been playing unique roles in human evolution and development (Jovanović 2015). All imaginations that occur in a genius's mind are not achieved at one time or even in the lifetime of the genius (History.com 2019, Famous Scientists 2016). The objective of the research is to seek a hidden nexus in human evolution and to establish the fact that there exists a nexus between fluctuating temperature and genius.

Data: Location and Climate

Geniuses in this research were born in a particular latitude and climate in Europe, America, and Asia. Climate data from selected locations (Figure 1 and Figure 2) linked to the evolution of humans and intelligence are categorised into groups for assessing and determining parameters for analysis. The current climate of locations/cities has been altered even on a microscale due to urbanisation and environmental changes. There are proven examples (Uniyal, Jha & Verma 2015, Abu Hammad and Tumeizi 2012). Palaeontologists are constantly learning the history of life on Earth through fossil records (Wood and Boyle 2016). Paleoclimatologists continuously research the temperature and precipitation that prevailed at each epoch through tree rings and ice core samples, surveying the sediment on the ocean floor, and studying ancient vegetation's fossils (White, Suwa & Asfaw, 1994).

This paper includes the temperature and precipitation data assessment results from some East African Rift Valley cities, some equatorial cities, some in the region, including Egypt and Israel (Table 1), and some in Europe, North America, and Asia (Table 2). Data from all 77 locations are given in annexes B, C, and D in the book "Climate-Temperature Genius Nexus (Bhusal 2022)". Table 3 gives an analysis summary. Seven locations where several anthropologists unearthed hominid fossils are

Table 1: List selected cities in the Great Rift Valley and Equatorial zone

The Zone-Hominid	The Zone-Equatorial
Eli Wiha, Hadar, Ethiopia	Singapore-20m, Singapore
Addis Ababa, Ethiopia	Pekanbaru-12m, Indonesian
Oldupai, Tanzania	Pedernales-6m, Ecuador
Lodar, Turkana	Manta-20, Ecuador
Marsabit, Kenya	Quito-2850m, Ecuador
Goma, Republic of Congo	São Tomé -150m, São Tomé Island
Beira, Mozambique	Mbandaka-300m, Republic of Congo
The Zone-Transit	Kampala-1200m, Uganda
Tel Aviv, Isreal	Kismayo-370m, Somalia
Tel Aviv, West Coast, Isreal	Mogadishu-9m, somalia
Eilat, Isreal	Nairobi-1795m (Dagoretti). Kenya
Aquaba, Jordan	Nairobi (Int Airport). Kenya
Alexgendria, Egypt	
Cairo, Egypt	
Khartoum, Sudan	

Table 2: List of birthplaces of selected geniuses

The Genius-Zone 1		The Genius-Zone 3	
Birth place	Genius	Birth place	Genius
Darvel, Scotland, UK	Alexander Fleming	Como, Italy	Alessandro Volta
London, UK	Babbage	Syracuse, Italy	Archimedes
Shawbury, UK	Charles Darwin	Budhapes, Hungary	Edward Teller
Kew, Newington Butts, UK	Faraday	Pisa, Itali	Galileo
Scarborough, UK	George Cayley	Budhapes, Hungary	Leo Szilard
Edinburg, UK	Graham Bell	Bologna, Italy	Luigi Galvani
Dirby,Derbshire, UK	Herbert Spencer	Warsdaw, Poland	Marie Curie
Nottingham, England, UK	Hounsfield G N	East Jutland, Denmark	Ole Romer
Woolsthorpe, UK	Isaac Newton		
Greenock, Renfrewshire, UK	James Watt	The Genius-Zone 4	
Belfast UK	Lord Kelvin	Birth place	Genius
Lambeth, London, UK	Peter Mansfield	Leiyang, China	Cai Lun
Slapton, Dartmouth, UK	Thomas Newcomen	Qufu, China	Confucius
Okehampton, Silstone, UK	Thomas Savery	Newyork, USA	Damadian R V
		Ferrel, USA	Erwin Luis Hahn
		Jurang, China	Ge Hong
		Sidney Ohio, USA	Lauterbur P C
		Buff, Iowa, USA	Lee de Forest
		Michigan, USA	Thomas Edison
		Milan, Ohio, USA	Thomas Edison
		Dayton, Ohio, USA	Wright brothers
The Genius-Zone 2		The Genius-Zone 5	
Birth place	Genius	Birth place	Genius
Stockholm, Sweden	Alfred Nobel	Lumbini, Nepal	Buddha
Thessaloniki, Greece.	Aristotle	Bathelhem, Israel	Christ
Ulm org, German	Einstein	Lake Charles, USA	DeBakey
Ulm Met, German	Einstein	Alexendria, Egypt	Heron of Alexandria
Munich, German	Einstein	Damauli Byas, Nepal	Ved Byas
Gdańsk, Poland	Fahrenheit	Kalpi, UP, India	Ved Byas
Trier, German	Karl Marx		
Coupray, France	Louis Braille		
Dole, France	Luis Pasteur		
Chalon-sur-Saône, Fraoce	Nicéphore Niépce		
Anklam, German	Otto Lilienthal		
Lenep, Prissia, German	Röntgen		
Athens, Greece	Socrates & Plato		

Methodology

The method includes the assessment and in-depth analysis of the variation in temperature fluctuations and differences between local climates and human body temperature, as well as the variation of the monthly mean temperatures concerning the modern normal human body temperature. Analysis, assessment, discussion, and conclusion are made from various perspectives. The supporting facts to the hypothesis are also drawn by examining the published research findings by multiple anthropologists and paleoclimatologists through the temperature data of the habitat of hominids in eastern Africa (Johanson 2017).

The analysis focused primarily on the temperature variations, fluctuations, and precipitation distribution over different zones. The temperature and precipitation parameters were derived using a simple arithmetical method (Arithmetic Methods n.d). The parameters derived and used in this study are explained below.

- The wide fluctuation is the maximum variation in maximum, minimum, and mean temperature (°C) between consecutive months. It is the absolute difference between the temperatures of two consecutive months.
- Similarly, the narrow fluctuation is the minimum variation in maximum, minimum, and mean temperature (°C) between consecutive months.
- The lump mean (wide or narrow) fluctuation is the average of 24 respective (wide or narrow) fluctuations in mean monthly maximum, minimum, and mean temperature (°C) between two consecutive months.
- The annual fluctuation in maximum, minimum, and mean monthly temperature is the difference between the yearly highest and the annual lowest value in each category.
- Lump annual temperature fluctuations(°C) are the average of twenty-four variations (12 monthly maximums and 12 monthly minimums).
- The difference between the hottest temperature and the coldest temperature in a year is called the extreme annual variation.
- The difference between the daily maximum and minimum temperature is called the diurnal temperature range. Changes in this range have multiple potential causes, such as cloud cover, urban heat, land-use patterns and changes, aerosols, water vapour, and greenhouse gases.
- 4°C, 32°C, 36°C and 37°C are the temperature that water starts freezing, the average human face, axillary, and core body temperatures, respectively (ONiO, 2021; White, 2011).
- Monthly per cent distribution of precipitation (percentage of the average annual)

Temperatures are not independent of precipitation (rainfall or snowfall) and humidity (NOAA 2020). When humidity (water vapour) levels are low, most commonly during winter and spring, the temperature has more significant daily swings. When humidity levels are relatively high, such as during the summer monsoon, temperatures often fluctuate less dramatically from day to night. Therefore, precipitation data are analysed to assess the nature of the monthly rainfall distribution.

Result, Discussion and Deduction

Due to the lack of climate records during the geniuses’ birthdates and the non-availability of reliable climate assessments, the widespread characteristics, features, and patterns are extracted from recent climate data series analysis. Climate data from seventy-seven locations in recent years were gathered from different sources and annexed (Annexe-A, B, C, and D) in the book pages 199 - 219– “Climate-Temperature Genius Nexus (Bhusal 2022).

Temperature fluctuation: Different parameters, including the lumpwide fluctuations and the lump-narrow fluctuations in temperatures (°C) between consecutive months with 95 per cent confidence levels of all zones, are figured out (Table 3) and plotted (Figures 3, 4, 5 and 6).

Table 3: Summary of the mean value of each parameter with a 95% confidence level for each zone

Parameters	Zone-Equatorial			Zone-Homid			Zone-Transit			Genius Zone 1			Genius Zone 2			Genius Zone 3			Genius Zone 4			Genius Zone 5		
	Mea n	95% Conf. Level		Mea n	95% Conf. Level		Mea n	95% Conf. Level		Mea n	95% Conf. Level		Mea n	95% Conf. Level		Mea n	95% Conf. Level		Mea n	95% Conf. Level		Mea n	95% Conf. Level	
Wide fluctuation in mean temperature between successive months °C	0.97	±	0.27	1.44	±	0.54	4.53	4.53	0.70	3.74	±	0.31	5.37	±	0.25	5.73	±	0.77	6.89	±	0.40	4.94	±	0.83
Wide fluctuation in max temperature between successive months °C	1.37	±	0.39	1.43	±	0.49	4.51	4.51	0.68	4.14	±	0.50	5.94	±	0.28	6.43	±	1.05	7.51	±	0.45	5.80	±	1.37
Wide fluctuation in min temperature between successive months °C	1.04	±	0.39	1.77	±	0.61	4.54	4.54	0.67	3.15	±	0.13	5.22	±	0.26	4.93	±	0.54	6.35	±	0.40	5.12	±	1.28
Lump mean of wide fluctuations between successive months °C	1.20	±	0.24	1.60	±	0.34	4.53	4.53	0.41	3.65	±	0.28	5.22	±	0.31	5.68	±	0.60	6.93	±	0.35	5.46	±	0.72
Narrow fluctuation in mean temperature between successive months °C	0.06	±	0.06	0.06	±	0.09	0.30	0.30	0.22	0.14	±	0.09	0.20	±	0.11	0.40	±	0.39	0.85	±	0.22	0.30	±	0.17
Narrow fluctuation in max temperature between successive months °C	0.06	±	0.04	0.10	±	0.14	0.49	0.49	0.16	0.24	±	0.13	0.30	±	0.20	0.36	±	0.33	0.73	±	0.29	0.30	±	0.33
Narrow fluctuation in min temperature between successive months °C	0.03	±	0.03	0.01	±	0.03	0.26	0.26	0.19	0.15	±	0.06	0.11	±	0.06	0.24	±	0.18	0.78	±	0.16	0.22	±	0.27
Lump mean of narrow fluctuations between successive months °C	0.05	±	0.03	0.06	±	0.06	0.37	0.37	0.13	0.19	±	0.07	0.22	±	0.08	0.30	±	0.19	0.76	±	0.15	0.26	±	0.15
Annual fluctuation in mean monthly temperature °C	2.45	±	0.74	3.09	±	1.82	14.66	14.66	2.43	12.58	±	0.87	18.93	±	1.21	19.32	±	2.68	26.89	±	1.56	15.34	±	2.33
Annual fluctuation in maximum monthly temperature °C	2.97	±	0.80	3.36	±	1.62	14.56	14.56	3.30	13.62	±	1.02	20.36	±	0.99	21.23	±	3.01	27.11	±	1.18	15.14	±	3.13
Annual fluctuation in minimum monthly temperature °C	2.18	±	0.76	3.57	±	2.04	14.50	14.50	1.74	10.61	±	0.44	16.73	±	1.25	16.66	±	2.03	25.20	±	1.49	16.28	±	2.58
Lump mean of annual temperature fluctuations °C	2.58	±	0.51	3.46	±	1.09	14.53	14.53	1.52	12.12	±	0.72	18.05	±	1.01	18.94	±	1.90	26.15	±	0.98	15.71	±	1.57
Annual mean temperature °C	23.95	±	6.88	21.65	±	5.02	23.32	23.32	3.29	10.21	±	0.78	12.03	±	1.87	12.08	±	3.64	12.54	±	1.92	21.94	±	3.07
Annual maximum temperature °C	30.07	±	2.00	28.61	±	4.74	35.36	35.36	4.94	20.52	±	1.33	26.31	±	2.20	26.96	±	3.21	29.82	±	1.54	33.75	±	4.45
Annual minimum temperature °C	18.48	±	3.48	14.29	±	5.67	10.59	10.59	2.16	1.39	±	0.51	0.26	±	1.71	-0.21	±	3.68	-5.13	±	2.83	8.02	±	1.11
Lump mean of annual temperatures °C	24.28	±	2.71	21.45	±	4.62	22.97	22.97	6.36	10.95	±	3.13	11.95	±	4.46	13.37	±	6.89	12.35	±	6.93	20.88	±	7.11
Difference between annual mean maximum & annual mean minimum temp. °C	11.58	±	1.87	14.33	±	1.85	24.77	24.77	4.32	19.13	±	1.33	26.06	±	1.28	27.17	±	2.29	34.95	±	1.82	25.73	±	3.97
Difference between core body temp & average mean monthly temp. °C	12.77	±	2.65	15.55	±	5.15	14.03	14.99	3.57	26.05	±	0.76	25.05	±	1.87	23.63	±	3.25	24.66	±	2.09	16.12	±	2.57
Difference between core body temp & mean max monthly temp. °C	8.46	±	2.65	9.98	±	4.50	8.37	8.37	4.45	23.65	±	0.97	21.11	±	2.04	20.91	±	3.92	19.80	±	1.85	9.86	±	4.09
Difference between core body temp & mean min monthly temp. °C	17.46	±	3.42	20.83	±	5.57	18.91	18.91	2.31	30.83	±	0.54	28.81	±	1.74	29.21	±	2.98	29.21	±	2.39	20.24	±	2.29
Difference between core body temp & Lump mean monthly temp °C	12.96	±	2.38	15.41	±	3.99	13.64	14.73	3.58	27.24	±	1.28	26.26	±	1.45	25.06	±	2.27	24.51	±	1.81	15.05	±	2.58
Monthly precipitation, percent of average annual total (higher)	0.20	±	0.05	0.20	±	0.05	0.26	0.26	0.06	0.11	±	0.01	0.13	±	0.02	0.13	±	0.02	0.14	±	0.04	0.25	±	0.09
Monthly precipitation, percent of average annual total (lower)	0.02	±	0.01	0.01	±	0.01	0.00	0.00	0.06	0.06	±	0.00	0.05	±	0.01	0.04	±	0.02	0.04	±	0.01	0.01	±	0.03

Note: A value of 0.0 °C or less than 1 °C means that there has been no temperature change between two or more consecutive months.

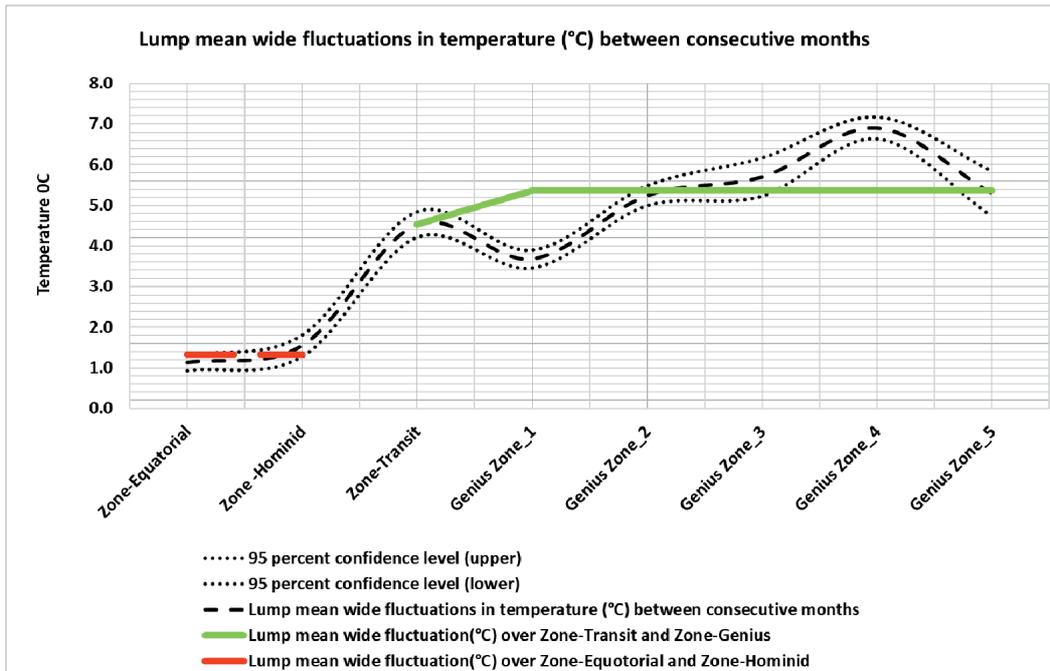


Figure 3: Lump mean wide fluctuations in temperature between successive months.

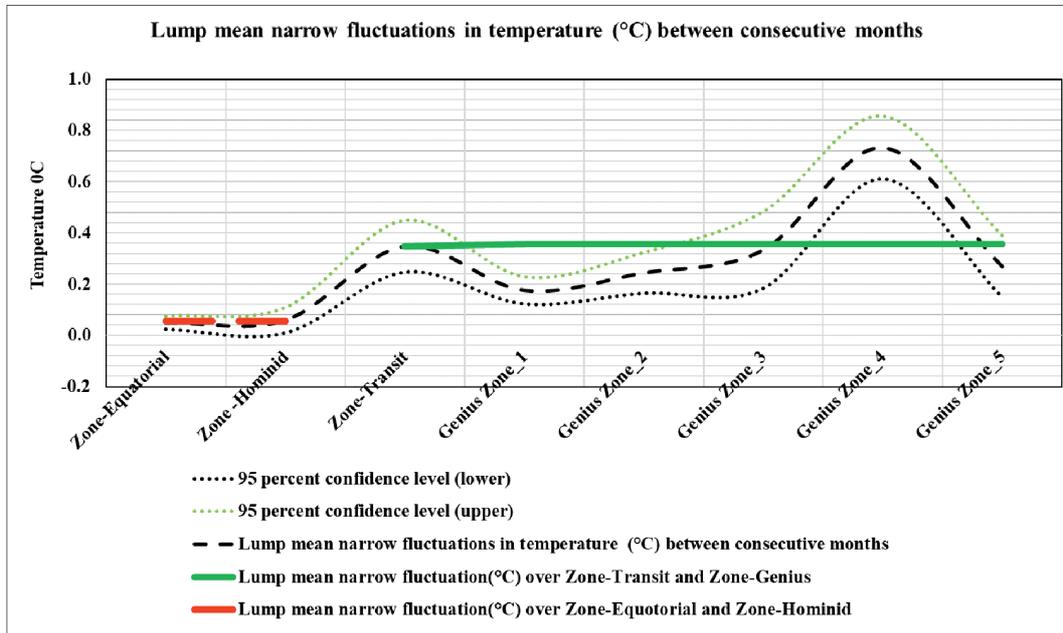


Figure 4: Lump narrow fluctuations in temperatures between successive months.

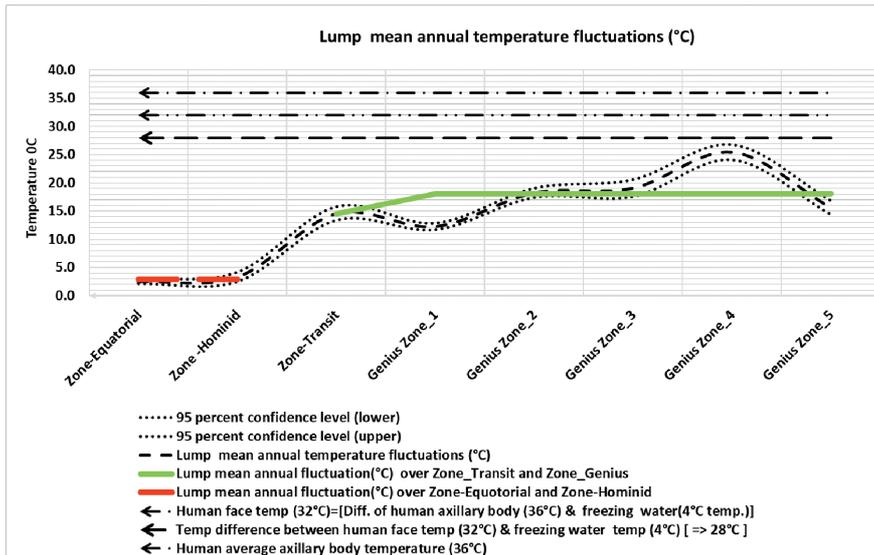


Figure 5: Lump mean annual temperature fluctuations (°C).

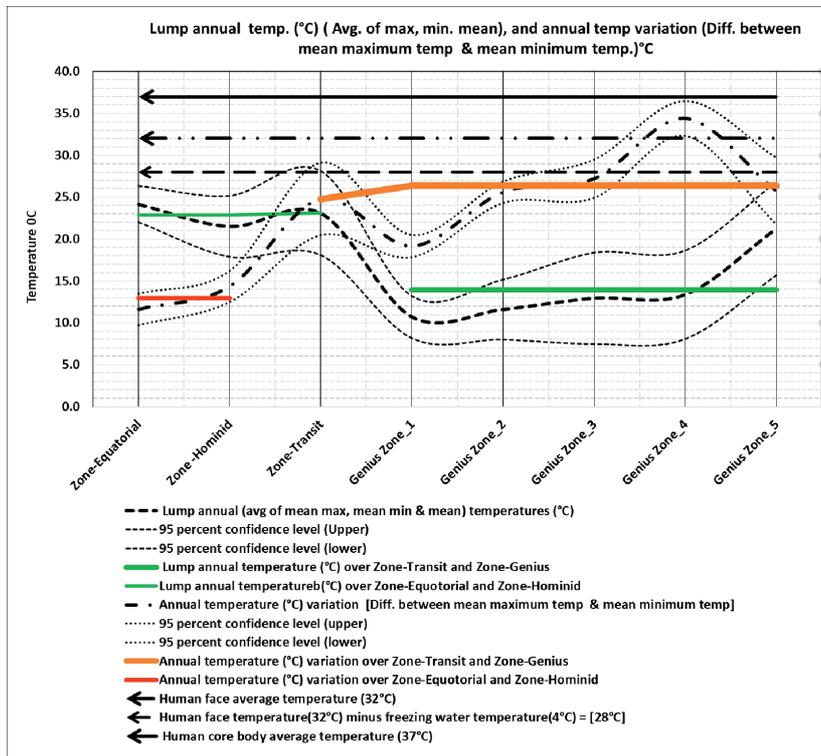


Figure 6: Lump annual temperature (°C) (Avg. of max., min., mean), and annual temperature variation (Difference between mean max. temp. & mean min. temp).

On average, narrow and wide temperature fluctuations between two consecutive months are 0.05 to 1.3 °C in the Zone-Hominid and 1.34 to 5.4 °C in Zone-Genius, respectively. The Zone-Genius experiences about 7 to 3.5 times the temperature fluctuations than the Zone-Hominid (Fig. 3, 4 and 5). Over 12 month (annual) solar cycles, the lump annual fluctuations are 18.2°C in cities of Zone-Genius, while it is about 3°C in cities of the Zone-Hominid and Zone-equatorial (Figure 5). The results showed that the Zone-Genius areas experienced wider temperature fluctuations by more than 6 times than the Zone-Hominid. Lump annual temperature variation over Zone-Transit is 24°C, and over Zone-Genius is 26°C, whereas over Zone-Equatorial and Zone-Hominid is 13°C. Similarly, the difference between human face temperature and lump annual temperature over Zone-Equatorial and Zone-Hominid is about 9°C, whereas over Zone-Transit and Zone-Genius is about 18°C. The results showed that the temperature variation in Zone-Genius is more than double that of Zone-Equatorial (Figure 6). A German doctor in the nineteenth century determined the standard human body temperature (ONiO, 2021) to be 37 °C (98.6°F)(temperature between 36.5 and 37.5 °C). Similarly, the normal temperature of the human skin (Das and Alagirusamy 2010) is approximately 33°C (91 °F). The human face's average temperature is 32°C, which is equal to the difference between freezing water temperature (4°C) and axillary body temperature (36°C). The difference between the human face and freezing water temperatures is 28 °C.

The annual temperature fluctuations prevailing over the Zone-Hominid are about 3.5 °C, while fluctuations over Zone-Genius are about 18 °C. In other words, species in the Zone-Genius felt or were exposed to broader temperature fluctuations. These results disclosed that the human ancestors experienced more temperature variations in the Zone-Genius than in the Zone-Hominid. Due to the latitude and altitude of selected cities in the transition zone, the lump mean annual temperature showed similarity with Zone-Hominid. In contrast, the lump mean annual fluctuations contradictorily showed similarity towards Zone-Genius. The lump mean temperatures represent an approximated temperature that human ancestors experienced mainly during their exposure to outside activities in those eras. No artificial cooling and warming utilities like air coolers and air conditioning were developed, so hominids have no alternative other than naturally available shelters.

Rainfall variation: Rainfall (precipitation) distribution is inescapably related to human evolution and intelligence. Rainfall directly affects the local climate and temperature variations. Precipitation shows seasonality and exhibits spatial and temporal variations. Temperatures depend on rainfall and humidity (Cong and Brady

2012). When humidity (water vapour) levels are low, most commonly during winter and spring, the temperature has more significant daily swings. When humidity levels are relatively high, such as during the summer monsoon, temperatures often fluctuate less dramatically from day to night. When not much water is available for evaporation, more of the sun's energy can go toward boosting temperatures. Precipitation, cloudiness, cold and hot winds, forests and vegetation, etc., are other natural factors (Temperature and Precipitation, n.d.) that influence the climate of any location. Factors impacting temperature and precipitation are latitude (the most significant influence), nearness to large bodies of water, and elevation. The precipitation and temperature relationship studies in the United States revealed that summer precipitation and temperature tended to be negatively correlated, with the highest in the central and southern Great Plains (Zhou and Khalil 1993). A negative correlation also persisted throughout the year in the eastern Rocky Mountain area, while neither coast had a strong correlation. In the east of the Corn Belt of the United States, a significant positive correlation occurred in winter in the area south of the Great Lakes, including most of Indiana, part of Illinois, Ohio, Kentucky, and Tennessee. The relationships are explained by cloud cover and the consequent changes in the heat balance of the regions.

An analysis of precipitation data is also carried out to assess the nature of rainfall over each zone. Rainy seasons and dry seasons occur consecutively in most areas. The precipitation amount in any location varies with the distance from the ocean and the sea, as well as latitude and topography. The monthly percentage distribution of rainfall shows which area has more rainy days and months. Some months have heavy rain/snowfall, and some are parched. Annual total precipitation (100%), if distributed equally over every 12 months, would be equal to 8.33% in each month. However, such an equal distribution never occurs in either hemisphere. The monthly precipitation in per cent of the annual total in each zone and the hypothetical line of 8.33% is shown in the graph (Figure 7). The average monthly precipitation as a percentage of the annual total showed that a maximum of about 20% of yearly rainfall occurred in certain months in the Zone-Hominid. In contrast, the same is limited to about 13% in the Zone-Genius. The Zone-Genius has more rainy days and months than the Zone-Hominid.

The Earth has been experiencing repeating ice and warmer ages on the geological timescale. Although the hominids were unaware of the motion and rotation of the Earth, they had to remember the nature of the cycle of day and night and a year in their own way. Hominid brains have had to strengthen their memory, retention, and transfer of their experiences to their respective offspring, including knowledge of the agro-pastoral system on how to sustain/survive against the changes in climate. However, the

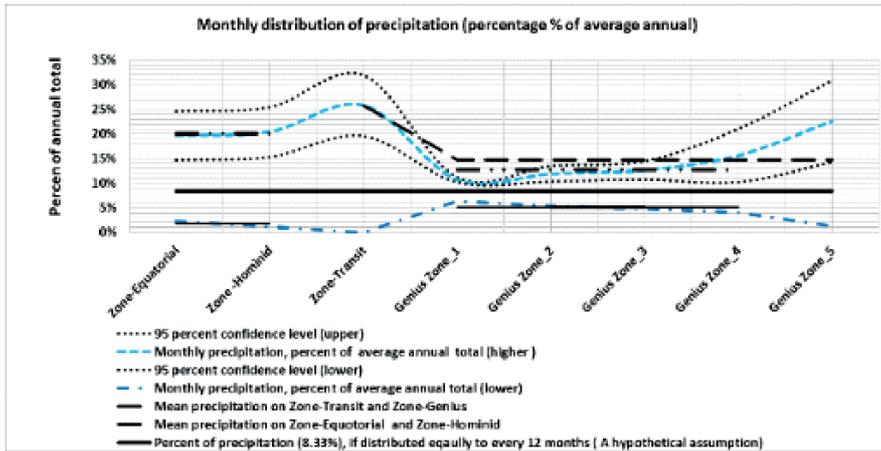


Figure 7: Monthly distribution of precipitation (percentage of the average annual).

philosophy of natural selection or the survival of the fittest (Howerth 1917), (Darwin 1859) has ignored temperature fluctuation and its relation to human genius.

Temperature fluctuation around the Hadar region: The Pliocene Epoch prevailed around 5.3 to 2.6 million years ago (Polly 1994), Figure 8 is the graphical presentation of monthly maximum temperatures of the Hadar region from 3.4 to 2.95 million years ago, figured out by subtracting 6.4°C, which is the value predicted by Bonnefille et al.(2004), from the current monthly maximum mean temperatures. The temperature difference between the human core body temperature and the current annual maximum mean is 7.2°C, while this difference was approximately 13.6°C (about double) during 3.4 to 2.95 million years ago.

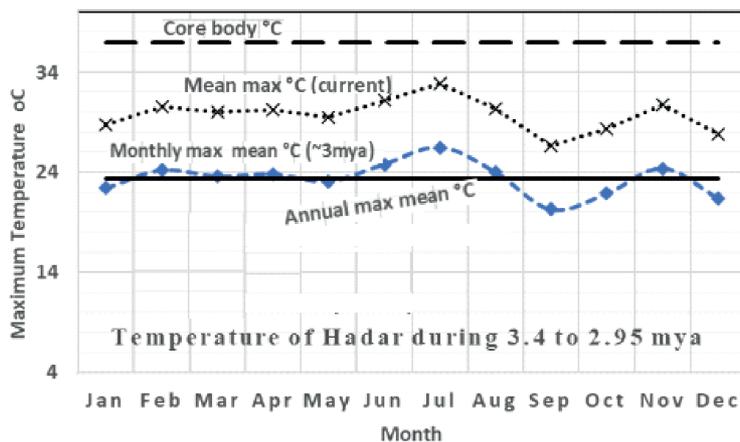


Figure 8: The temperature of the Hadar from 3.4 to 2.95 million years ago.

How slow are climate changes, and does Figure 8 truly represent the temperature during the migration, dispersion, and diversification period of the hominids from 2 to 3 million years ago or not? The findings hinted that the hominid lineage had struggled with changing environments and climate extremes. Even though there are no exact answers, hominid ancestors realised the changes in local climates, forcing them to find ways to survive and search for newer and newer places/regions to shelter. Like other living creatures, human ancestors were covered with hair. Nevertheless, they needed to cover their body to protect themselves from the cold, the heat, and the rain.

Deduction: *Sahelanthropus tchadensis* (*Sahelanthropus* (n.d.)), one of the oldest-known species in the human family tree, was discovered in 2001 in the West-Central Africa region (Chad). This species lived sometime between 7 and 6 million years ago. Anthropologists have assumed it to have a combination of ape-like and human-like features (American Museum of Natural History, n.d.). There are pieces of evidence to show that parts of the Great Lake Chad region started forming 94 million years ago from the coastal area of the Arabian Sea (Hansen & Koch, n.d.). The fossil of a Prosimian species found in this area dates back to 50-55 million years old (Napier and Napier 1985). The continental shift theory states that the African continent is also shifting northwards, so the zero-latitude line moved southwards (Wegener 1912). Figure 9 shows that the region falling on the zero-latitude line was not static (Scotese, n.d., Gloria 2024).

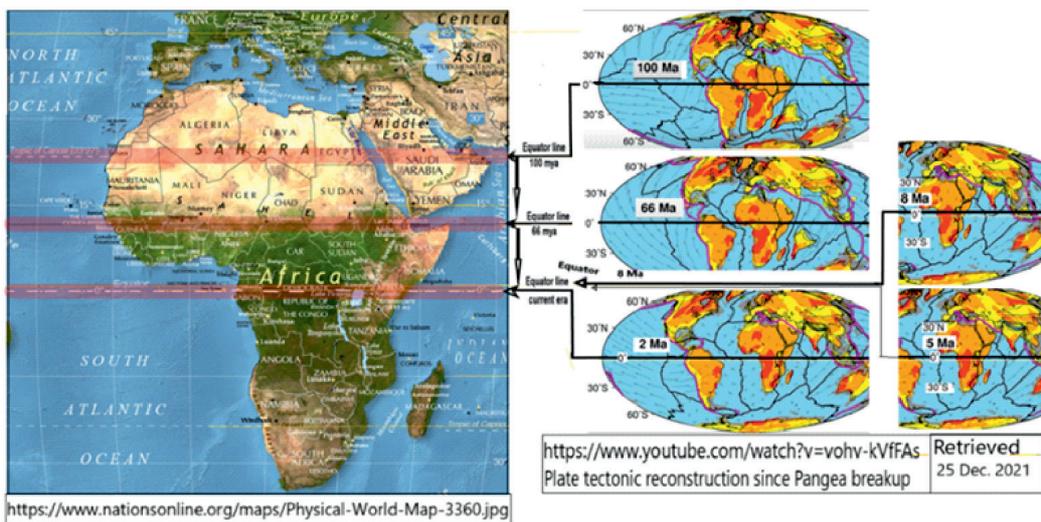


Figure 9: illustrates various positions of the equatorial line based on continental drift theory (Bhusal 2022.).

Such shifts changed the temperature of the 'Mother's womb, such as the aquatic environment of species, likely gametes or zygote type. With temperature variation, some species attained different shapes and sizes and transformed into newer and newer species and ultimately into amphibians and then terrestrial primates, like prosimians' ancestors (O'Neil 1999-2012). The continued mutation linked to mental and physiological changes has been guided by the brain, continuously awakened by environmental changes, including fluctuating temperature. The brain automatically guides the modelling of body and organ shape (physiology and anatomy changes) throughout the various stages of evolution. Consciousness is the self-growing achievement of the human brain, due to which the human brain has been continuously directed to have physical changes in the human body. At some stages, the prime function of human ancestors' brains was to model the body function, significantly freeing two forelegs from the job of walking and body support. This achievement of the human brain enabled its body to balance an upright position. The brain must have exterminated the tail ancestor; the brain's neglecting the use of the tail made it vanish after several generations. It is univocal that the physical changes took generations to come to the Homo Sapiens stage (www.pbs.org, 2001, updated in 2007). The ten incarnations of Vishnu) was not just a story of God periodically incarnating to set right an erring world and establish religious righteousness. It carries a scientific account of the evolution of humankind, with a religious-mythological flavour that makes it palatable for public consumption (Ganesan, Dasavatara: The Hindu theory of evolution, 2018). The development of a fertilized egg (embryo/zygote) into a fully formed human body within nine months in the mother's womb can be seen as a time-lapse illustration of human evolution from the unicellular stage. The changing climate and habitat environment inspire and force the brain to achieve bipedalism. The key change in the outer physiology of our four-footed ancestors is the stage of reaching bipedalism. After attaining two hands-free, humans could perform three-dimensional actions, enhancing their innovative capacities. A genius brain achieves relatively higher and higher ability at all stages of human evolution.

Human ancestors reached the bipedalism stage around 2-3 million years ago. Although hominids were unaware of the Earth's motion and rotation, they had to remember the cyclical nature of the day and night and the year in their methods. They have had to remember the recurring seasonal climates at all times and over millennia. They had to strengthen memorising, keeping experiences, and transferring observational outputs to their respective offspring about how to sustain themselves against the changes in climates, threats, and livelihood support systems, such as knowledge to recognise agro-pastoral locations, etc.

Hominids, especially *Australopithecus* (Wood and Boyle 2016) and their contemporary stages, would undoubtedly have more complex livelihoods, which forced them to migrate (Milo 2022) to Europe and Asia, where they were exposed to more expansive temperature-fluctuating environments. The different rainy seasons over Ethiopia, Sudan, Egypt, and the Israel region supported the out-migration of Hominids from Africa to the Middle East and onwards. Not only rain over the region, but also the Nile River and its ecosystem would have supported agricultural food during out-migration. Due to latitude and altitude differences, the transition zone lump mean annual temperature is similar to the Zone-Hominid, and the lump mean annual fluctuations are similar to Zone-Genius, which supports the hypothesis that hominids also accelerated intelligence while migrating. The migratory paths from Hadar and neighbouring regions across the African continent towards the Middle East exceed approximately 3 to 4 thousand kilometres, and it is not clear whether hominids travel continuously or in year-to-year gaps (Blaxland and Dorey 2020). However, the hominids had gathered memories of the weather changes, seasons, and the natural agropastoral locations on their migratory routes. The widening of temperature fluctuations from one climatic zone to another climatic zone in their migratory regions had also favoured awaking/enlightening the brain, strengthening the memorising capacity, and the development of intelligence and genius, which was enhanced in human ancestors.

Conclusion and Remarks

Notwithstanding the used data series, the daily, monthly, and yearly temperature fluctuation and their ratios from one zone to another have satisfactorily supported the conclusion that temperature fluctuation is linked with human intelligence and genius.

Whether specific locations had the most favourable temperature for mutating to newer and newer shapes and body structures of life and enabling the brain to improve memorisation and intelligence, is either uncertain or not yet authentically drilled out. However, some locations had the most favourable climatic environment for developing species on long evolutionary lineages. Fluctuating temperatures and changing environments have been the key catalysts and an ingredient for achieving brain automation in the long path of its development.

Human ancestors' forelegs, called today "Hands," were also used for walking and body support until a few million years ago. It was the inherent property of the brain that guided mutation to shape anatomy as needed, getting only two back legs enabled for body support and walking. The stage of brain automation in human evolution, when humans reached bipedalism, was the central turning point for the brain to intensify

toward innovations and inventions. The brain is a complex anatomy (Buonomano 2015). An essential part of the brain is its self-awareness/realisation built into it. Another part is its self-automation, such as the ability to find remedies for all causes recognised and foreseen around it. Reaching the modern era, the brain has become a living computer that creates and stores knowledge, innovates, and seeks answers and remedies.

In addition to balanced food ingredients for body systems and social environments, the analysis supports the fact that genius brain development is primarily related to the fluctuating temperature of the environment; precipitation in combination with other climatic parameters is essential to growing natural hygienic foods. Though intelligence related to invention and innovation is backed by background knowledge, it is a fact that the fluctuating temperature of the environment played a leading role in the development of our ancestors. Some brain lies at a lower level, and others lie at a higher level of intelligence. Whatever the level, every brain is active on its own level and cares about things around it. Prosimian and primates' offspring continue to perform brain exercises on their capacities. Those capable developed and progressed ahead to the newer and newer families, whereas those incapable were left behind to extinction.

It is hard to quantify precisely whether the body temperature of the hominids was similar to that of the modern human (36/37 °C) or was slightly different in adapting to the then environment and climate. However, we can certainly consider that a standard healthy human ancestor (Hominids) had a body temperature close to that of a modern human. However, the climate on global, regional, and local scales has been up and down in all different epochs, affecting the evolution of the species.

In the context of climate-temperature-fluctuation genius nexus, the human brain's behaviours are affected by climate change. Behaviour is a replica of the status/level of brain development. Hence, this research also sheds light on how human behaviour is affected by the changing climate.

Remarks: The present study results supported that the ambient temperature fluctuations of 28 degrees Celsius distributed over a day, a month, or a year cycle are the favourable range for developing human intelligence. The value of 28 is between 4°C (start of water freezing) and 32°C (human face's average temperature). Broadly, it can be stated that a beneficial habitat for a genius to grow from birth until toddler and kidhood period is where maximum temperatures do not reach 32 to 37°C and minimum temperatures do not fall to 4 to 0 °C. The finding that a nexus exists between fluctuating temperature and genius also opens doors for further research on trends in human behaviour changes due to its link with fluctuating temperatures.

Limitation: The deductions drawn are based on the analysis of limited data and the limited publication of related subjects by various researchers. The data for all selected locations (Tables 1 and 2) are only averages for some years. The results/values differ slightly with more extended data series of different periods. However, in principle, the hypothesis concluded from the data analysis will remain the same.

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Notes

1. Note: The author and base map source mark locations genius: <http://koeppen-geiger.vu-wien.ac.at/pdf/1976-2000.pdf>. September 10, 2021.
2. Note: The regions where various researchers found hominid fossils are marked (by the author) in circles at Map(A) and Map(B) in Figure 2. The base map for the Köppen climate zones is sourced from <https://earthhow.com/koppen-climate-classification/> (July 9, 2021). The map of the major terrestrial biomes is sourced from Encyclopaedia Britannica, Inc.

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