



CRITICAL APPRAISAL OF AN ARTICLE ON "EMPEROR ASHOKA: DID HE SUFFER FROM VON- RECKLINGHAUSEN'S DISEASE?"

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ABSTRACT

Background: Phakos in Greek means "mother spot, mole or freckle." There are various types of phakomatoses e.g., neurofibromatosis, tuberous sclerosis (TSC) and cutaneous angiomas with central nervous system abnormalities. Neurofibromatosis are of four types e.g., Neurofibromatosis type 1 (NF-1), also called von Recklinghausen's disease or 'peripheral' type; Neurofibromatosis type 2 (NF-2), 'bilateral acoustic neuromas' central type; localized form of the disease, 'segmental neurofibromatosis' and cutaneous form limited to pigmentary changes. However, tuberous sclerosis (TSC) is characterized by triad of adenoma sebaceum, shagreen patch, epilepsy, and mental retardation or learning difficulties. **Methods and Materials:** A textual analysis of an article written by Wig *et al.*, 2015 "Emperor Ashoka: Did he suffer from von- Recklinghausen's disease?" was taken and subject to Ludwig Wittgenstein's Truth-table to show whether a propositional expression is logically valid. **Results:** The analysis reveals distortion of facts due to perceptual and intellectual bias. The results should be interpreted with caution as it covertly, maligns historical event. **Conclusion:** It is concluded that truth should be interpreted in the light of scientific methodology rather than on individual's inspiration or experiential knowledge, which is a metaphysical truth.

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INTRODUCTION

The article published in the Indian Journal of Psychiatry 2015; 57(1): 95-7 by Wig NN and Sharma S^[1] requires review because of the inconsistencies and contradictions. Possible diagnosis that Emperor Ashoka suffered from von Recklinghausen's disease, Neurofibromatosis type-1 (NF-1) is not acceptable. Wig *et al.*, 2015^[1] suggest the following points for diagnosis:-

1. Ashoka had gross skin condition in which his skin was like dust or dirt. It was unpleasant to touch.
2. He had many episodes of loss of consciousness.
3. Ashoka was a short statured man, paunchy, with a grossly pumpkin-like face.
4. His father Bindusara was also known to have "spots" on the skin as indicated by his name.

In our assessment for establishing the truth in research we applied principles of Logic given by Ludwig Wittgenstein in his seminal book titled, "Tractatus logico-Philosophicus".^[2] Similarly, in Aristotelian logic statement that is a categorical proposition can be expressed in one of these forms:

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Statement-1: All S is P universal affirmative; Statement-2: No S is P, universal negative; Statement-3: Some S is P, particular affirmative and Statement-4: Some S is not P, particular negative.^[3]

In this case, some man is Ashoka but all men are not Ashoka; and other predicates i.e., none man is Ashoka; and also some men are not Ashoka are false statement. Hence, Statement-3 defines the subject as (Ashoka) which is valid only for proposition in which a predicate belongs to a subject and is a categorical syllogism.

However, the truthfulness of its predicate needs further assessment?

He is having von Recklinghausen disease as proposed by Wig *et al.*, 2015 is a hypothetical situation. According to Kant, in a hypothetical statement agent "ought to" do or certain end is desired by the agent.^[4] Herein the agent of this proposition is Wig *et al.*, 2015. But Kant's categorical imperative imposes maxim of action being a universal law on agent and exhibits in three formulations:

1. Agent should be able to will and it's a law of nature. Wig *et al.*, willed to malign Ashoka and it is against the natural law.
2. Persons treated are ends-in-themselves. Ashoka suffers from von Recklinghausen is imposed, which is not truth.

3. Agent is a legislature and subject of the moral law. Wig *et al.*, intention is questionable because of personal, emotional and socio-cultural bias.

The conclusions drawn are conjectures and fraught with errors. Their evidences are textual and taken out of context from the book written by Charles Allen, 'Ashoka - The search for the India's Lost Emperor.'^[5]

We extracted various research articles relied by the Wig *et al.*, 2015 and reviewed other authorities who had similar observation but difference of opinion. To analyze whether the conclusion drawn by different authors are same or not and in case of variance; current research in neuroscience is relied upon. Thus, it is for the readers to use their discriminative faculties before accepting the article of faith as scientific truth, which in our opinion is merely a conjecture and figment of imagination as it fails to stand principles of logic. The truth as propounded by Ludwig Wittgenstein states that if a sign is not necessary then it is meaningless.

Regarding condition of skin

Charles Allen, 'Ashoka - The search for India's Lost Emperor'^[5]

Page 188, para 2, lines 7-16

"The legend of King Ashoka opens with a long account of Upagupta's saintliness in a previous life before describing how Upagupta is reborn as the son of a perfume seller of Mathura and ordained as a Buddhist Monk. Only then, does Ashoka come into story, beginning with his previous existence as a boy who meets Buddha, also in a previous life, on the road and makes him an offering of a handful of dirt-an action with profound karmic consequences. The Buddha accepts the offering and predicts how in consequences the boy will be reborn as Ashoka a hundred years after his own death."

Page 188, para 3, lines 28-30

"Bindusara rejects the boy because his skin is 'rough and unpleasant to touch'- a direct consequences of his offering in his previous birth."

Page 190, para 3, lines 15-17

"When he learns that his concubines dislike caressing his rough skin he orders them to be burned alive."

Page 374, para 3, lines 20-22

"Ashoka suffered from some form of skin condition-'rough and unpleasant to touch'-that made him so unattractive that his father wanted nothing to do with him."

Page 374, para 3, lines 26-31

"The legend of King Ashoka also tells how the unreformed Wrathful Ashoka burns his entire harem on hearing that they disliked caressing his skin where the court diviner declared that Ashoka's body bears certain inauspicious marks, which he tries to remove by performing meritorious deeds."

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Evidence in favor of rough skin

Wytze Keuning and J E Steur, 'Ashoka the Great'^[6]

Pages 5-6

"Wild Prince (Ashoka) wrapped beautiful maiden, Aradi in his arms and asked would she be her Rani? She detested by

saying that he was ugly. In her opinion, she likes to be with Crown prince- Sumana, who is more handsome as compared to him in beauty, both outer and inner.

She told him that he had soiled her precious dress and exposed her to the ridicule of her friends and the Crown Prince."

Romila Thapar, 'Ashoka and the Decline of Mauryas'^[7]

Page 36, para 3, lines 21-27

"The Buddhist sources would have us believed that as young man he was an intensely wicked person and when the women of his harem told him that he was unpleasant to look at. He had all five hundred burnt, thus earning the name of Chand Ashoka (Ashoka the cruel) then only this idea of building Hell on earth originated in their remark."

Evidence against the rough skin

Page 69, para 2, lines 16-21

"The traditions were collected from various areas and were being continually revised and contaminated. They were worked over by Buddhist Monks who no doubt have changed them where necessary to suit Buddhist morals."

Comments

Buddhism does not believe in soul, karma and its transmigration into the next generation. The text describes about Upagupta and his rationalization of being ordained as Buddhist Monk. He conveys and interprets the preordained destiny of King Ashoka, about his birth and meaning of life. Thus, convincing him to convert as devout Buddhist, perform piety, give charity, build Stupas, and spread Dharama. The text is an exaggeration of Buddhist scholars and similar accounts given for others who converted to Buddhism. Romila Thapar^[4] also states that before conversion to Buddhism, this portrayal of Ashoka as an extremely wicked man, and his creation of Hell where torture, mayhem, and burning of people done whimsically and sudden conversion to life of piety may safely be regarded as fabrication of the Buddhist authors.

Regarding episodes of loss of consciousness

Charles Allen, 'Ashoka-The search for India's Lost Emperor'^[5]

Page 192, para 1, lines 1-2

"Overcome with motion that he faints and has to be revived by his attendants."

Page 192, para 2, lines 7-14

"When he returns to Bodhgaya to find that the Bodhi tree is dying, he again faints. He learns that the Bodhi tree been cursed by an act of sorcery instigated by chief queen. She realizes her mistake and gets the curse lifted by watering the roots of the Bodhi tree with a thousand pitchers of milk a day until it revives."

Page 193, para 2, lines 11, 12 and 15-23

"Ashoka then falls dangerously ill in Pataliputra, with an impure substance oozing from his pores."

"She (Tishyarakshita) therefore sets to find a cure for Ashoka's illness by making enquiries to see if anyone is suffering in the same way as the King. One such victim is found and brought to the queen, who kills him; cuts open his belly and discover a large worm. She experiments with successive remedies, none

of which kills the worm until she tries an onion, doses the King with onion, and cures him."

Page 375, para 1, lines 2-3

"Panel on Sanchi's South Gateway shows the emperor fainting into the arms of his queens before the Bodhi tree."

Page 375, para 2, lines 8-12

"This fainting episode is one of the several such instances described in Lanka's Great Dynastic Chronicle, suggesting either that Ashoka was a highly emotional type or that he suffered from something like epilepsy- the falling sickness of antiquity."

Comments

Throughout his empire, Emperor Ashoka built 84,000 monuments containing Buddha's relics. Furthermore, at the request of the people of Taxila he built three and a half thousand millions more Stupas. Upagupta then takes Ashoka on a pilgrimage to these holy places. Now, taking such an arduous journey in the ancient period during hot and humid environment where means of communication are chariots, elephants etc., will exhaust any person, and thus, fainting is common. These texts of fainting episodes taken out of context by Wig *et al.*, 2015^[1] suggest that Emperor Ashoka had episodes of loss of consciousness due to epilepsy rather it can be attributed to seizures i.e., provoked by acute infections of the CNS and do not fulfill the international definitions of epilepsy.^[8,9]

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Wytze Keuning and JE Steur, 'Ashoka the Great'^[6]

Evidence in favor of Loss of consciousness

Page 977

"Listen, Vakkula. Look for someone who has the same ailment as the Maharajah." The physician cannot recall such case as this.

Etiological cause for loss of consciousness

Page 978

"Eventually, they find an Ablura who is showing the similar symptoms. She orders the state physician to operate upon the patient to know the cause. However, after initial reluctance they open up the Ablura's body, examine, and discover the cause of illness. With newly derived knowledge, the treatment of Maharajah becomes simpler, and the recovery process soon begins"

Evidence for treatment of loss of consciousness

Romila Thapar, 'Ashoka and decline of Mauryas'^[7]

Page 67, para1, lines 4-5

"Meanwhile Ashoka falls ill. Tishyarakshita by means of stratagem diagnosis the sickness and is able to cure."

Kamavisdar, (1980)^[10] reported that Emperor Ashoka suffered from intestinal obstruction due to roundworms. Tishyarakshita, asked the physician to bring the patient having similar symptoms. She opened his abdomen and observed that when long roundworm went upward it causes vomiting with faecal odour and on downward movement purging. In ancient texts, treatment with marica (Piper nigrum), pippali (Piper longum) and sunthi (Zingibre officinale) were tried for intestinal obstruction but could not prove to be effective, though they

belong to Palandu (Onion) series. However, *Allium sativum* (Garlic) with fungi *Erysiphe taurica* Lev, *Alternaria palaundi* and *Rhizopus* sp. have been recognized for destruction of worms.

Comments

After perusal of the literature, it is established that Emperor Ashoka suffered from intestinal obstruction caused by roundworms. Impure substance oozing out of pores was from oro-faecal route. There were inconsistencies regarding who operated upon the patient having similar symptoms as Maharajah. The textual record states that Tishyarakshita was illiterate could not read and write [Keuning *et al.*, page 1009]^[6], so possibility of her operating on patient is an exaggeration, rather physician/surgeon might have performed/given treatment. The treatment in the form of onion is also debatable rather combination with *Allium sativum* is more appropriate that resulted in gradual recovery of Maharajah.

Loss of consciousness as depicted on the pillar of West Gateway of Great Stupa at Sanchi and reported by Charles Allen, [page 342]^[5], Keuning *et al.*,^[6] and Kamavisdar^[10] was because of fatigue and helminthic illness, respectively rather than epilepsy of TSC as suggested by Wig *et al.*, 2015.^[1]

Emperor Ashoka had profound regard for Bodhi tree and on receiving message that it was dying due to Tishyarakshita's evil intentions, he misinterpreted it as a sign of his death. He wanted to revive the tree with a belief that it might revive him. Person loses hope of his recovery during process of prolong illness that may results in depressive state which colors the corresponding socio-cultural environment and derives erroneous meaning because of apperception.

Ashoka was short statured man, paunchy, with a grossly pumpkin-like face

Charles Allen, 'Ashoka-The search for India's Lost Emperor'^[5]

Page 343, para 2, lines 20-23

"Lieutenant Maisey's drawing from 1851 failed to show, which is that the Ashoka here is short and fat, with a balloon-like head."

Page 375, para 1, lines 6-7

"Ashoka as short, paunchy and with a grossly pumpkin-like face."

Page 398, para 1, lines 5-6

"Ashoka was a stumpy, fat-faced and fragile king with a tendency to faint under stress."

Authors RR, RTR, Joshi & Bhagat

Comments

Maisey's failure in identifying Ashoka undermines his reliability to ascribe causal relationship whether; Ashoka was short and fat, with balloon-like head. Balloon-like head is a depiction of head gear worn by regale, rather than enlarged head due to congenital anomaly e.g., hydrocephalus as presumed by Wig *et al.*, 2015^[1] which may or may not be Emperor Ashoka. The "balloon-like head" of Emperor Ashoka as reported by Maisey in the book written by Charles Allen^[2] and suggested by Wig *et al.*, 2015^[1] as one of the symptoms of TSC with intellectual sub-normality is farce

because Maisey himself had doubt about the identity of the person who was paying obeisance to Bodhi tree.

His father Bindusara is also known to have "spots" on the skin as indicated by his name

Charles Allen, 'Ashoka-The search for India's Lost Emperor' [5]

Page 368, para, 3, lines 21-30

"Great Dynastic Chronicle, describes Dhurdara, the wife of Chandragupta Maurya who accidentally took poison during her late stage of pregnancy, forcing Chanakya to sever her head by stopping the flow of blood and performed emergency caesarean section to save the child. Hence, the boy known as Bindusara, or Blood spotted."

Romila Thapar, 'Ashoka and decline of Mauryas' [7]

Page 22, para 4, lines 24-32 & page 23, para 1, lines 1-4

"The name Bindusara is a play on words by Buddhist chroniclers. Kautalya made Chandragupta immune from poison by putting minute quantities of it into his food each day. Chief Queen who was pregnant took morsel of food from Chandragupta. Kautalya was too late in stopping her and realized that only way to save the child was by severing the head of queen. He cuts open her belly and places the embryo in the womb of a goat. When the child was born he was covered with spots and therefore, called Bindusara (Bindu = spot, sara= essence)."

Authors RR, RTR, Joshi & Bhagat

Comments

It is probable that name of Bindusara could be play on words or birthmark, the location and site of distribution itself is disputable. It could be on the forehead, face, or neck etc. Blood spotted at birth is more in favor of portwine hemangioma rather than café-au-lait spots of NF-1 as suggested by Wig *et al.*, 2015. [1] Bindusara might have blood colored cutaneous birthmark e.g., portwine stain on forehead without any cerebral involvement or complications and these cutaneous forms of NF-1 reported to have limited pigmentary changes with no other clinical manifestation. There location is limited to segment of the body e.g., intra-thoracic or intra-abdominal neurofibromas. There is wide variation and inconsistencies in description of lesions so it's not acceptable.

DISCUSSION

The techniques of textual analysis place content of the text in its pristine state. It removes personal biases that inadvertently or intentionally entered in the article in process of copying and reporting to distort facts. Thus, textual contents of the writing are interpreted in the light of historians e.g., Allen, Keuning and Steur, Romila Thapar and Neuropsychiatric research.

The statement of the author "Whether (if), Emperor Ashoka (p) implies (→) then (q) suffers from von Recklinghausen's disease."

A compound statement of the form 'if p, then q' is a conditional statement. The if-clause (p) is called antecedent and then-clause is consequent (q). It applies the principle of logical implication and the material conditionality and both are associated with an operation on two logical values, typically these values of two propositions produce a value of falsity if

the first operand is true and the second operand is false, and a value of true otherwise.

The truth table associated with the logical implication p implies q (symbolized as $p \Rightarrow q$, or more rarely Cpq) is as follows: It may also be useful to note that $p \Rightarrow q$ and $p \rightarrow q$ are equivalent to $\neg p \vee q$. [11]

P	Q	P → Q
T	T	T
T	F	F
F	T	T
F	F	T

"If you are P (Ashoka), then you have Q disease." The statement will be *true* if Ashoka then von Recklinghausen disease and *false* if he is not Ashoka.

Suppose it's *true* that you are Ashoka and it's *true* that you have von Recklinghausen disease. Since, it implies {it true} truth. This corresponds to the first line in the table.

Suppose it's *true* that you are Ashoka but it's *false* that you have von Recklinghausen disease. Since I *didn't* have von Recklinghausen disease, the implication is *false*. This corresponds to the second line in the table.

What if Ashoka is false? Whether or not person has disease, implied statement is truth as it starts by raising doubt. Thus, the implication can't be false, so (since this is a two-valued logic) it must be true. This explains the last two lines of the table.

Von Recklinghausen's disease is a generalized neurofibromatosis, a hereditary disorder characterized by multiple nodules all over the body and it may be associated with 'café au* lait' spots; a pale brown areas of increased epidermal melanocytes and melanin in the skin, often seen in neurofibromatosis (Oxford & I.B.H New Medical Dictionary) described by Friedrich von Recklinghausen, a German pathologist.

The possibility that Bindusara might have inherited the disease from his father Chandragupta Maurya is a farce, as there is no mention of any such symptoms on Chandragupta Maurya's body. Had he suffered then Chanakya would not have chosen him as an ideal candidate to dethrone Nanda dynasty of Magadha? Bindusara was also known as 'Amitraghata', Slayer of foes'. The Jain work 'Rajavalikathe' calls him 'Simhasena'. It is in the Puranas that the name of Bindusara first appeared and is generally accepted now. Neither Chanakya nor Tibetan writer Taranath had recorded anything about such illness.

Bindusara was a play on words as suggested by Romila Thapar, which means "spot of essence." [7] There were inconsistencies regarding number of spots because Charles Allen [5] stated "blood spotted which means hemorrhagic spot" possibly port-wine hemangioma, a skin change not otherwise in themselves diagnostic of TSC rather than café-au-lait spots (dark brown in color), shagreen patch or ash-leaf. Regarding location, as reported by Srinivasachariar it was on forehead "permanent bluish spot" [12], whereas Romila Thapar [7] narrated it as multiple, though their type, location and distribution were not specified. However, Wig *et al.*, 2015 [1] conjectured that they are multiple, adenoma sebaceum, molluscum firosum (flattened, sessile, pedunculated, conical, lobulated and flesh colored) and hence, part of NF-1.

Bindusara inherited the vast empire from his father and Greek rulers of the west. Deimachus succeeded Megasthenes as ambassador and was sent by Syrian King to the court of Bindusara. Pliny tells us that Ptolemy-II Philadelphus, the King of Egypt (285-247B.C.) also sent an ambassador named Dionysus to the Indian court, but nowhere it is stated whether Bindusara or his successor Ashoka suffered from any such disease.^[13] It is pertinent to note that none of the other contemporaries or later historians e.g., Chanakya, Jain treatise Rajavalikathe, Puranas, Taranatha etc., ever gave any hint of such disease of Bindusara. Therefore, the claim of researchers is simply preposterous.

The NF-1 is autosomal dominant and gene mapped to chromosome 17q11.2.^[14,15] Establishing genetic linkage or autosomal dominance of disease by narrating that the skin of Bindusara (Father) was having multiple café-au-lait spots and his son (Ashoka) had rough skin, which was ugly to look at, is not tenable because eldest son of Bindusara, Sumana does not show any cutaneous manifestation. Penetration of NF-1 is 100%, but expression varies. Mutation accounts for 50% of new cases. Both sexes equally affected and the condition is worldwide.^[1]

Wig *et al.*, 2015^[1] suggests that Emperor Ashoka suffered from von Recklinghausen's disease NF-1 but gave evidences for TSC. The common features of TSC are hereditary transmission, involvement of ecto-dermal origin (nervous system, eyeball, retina and skin), and slow evolution of café-au-lait spots (generally 6 or more of >5 mm diameter pre-pubertal and >15 mm post-pubertal) in childhood and adolescence; a tendency to form hamartomas or Lisch nodules and disposition to fatal malignant transformation.^[16] However, none reported therefore, devoid of any truth and not acceptable.

Had Ashoka been born in the current era, he should have been clinically evaluated, investigated and supplemented by other ancillary tests e.g., intelligence quotient (IQ), electroencephalogram (EEG), slit-lamp examination of iris, visual and auditory evoked responses, computer tomogram (CT), magnetic resonance imaging (MRI), 24-hour urine for metabolites of epinephrine to rule out suspicion of pheochromocytoma. In NF-1, IQ score is below 70 in 8-10%. Performance IQ is less than verbal IQ.^[17] However, Ashoka neither manifested any of these symptoms nor any other illness e.g., specific severe learning disabilities or attention deficit hyperkinetic disorders (ADHD) with or without impaired speech.^[18]

Ashoka was intelligent, robust, courageous and a self made man. It was because of these qualities that his father sent him to take control over the revolt in Taxila. He was 18 years of age at that time and became King after demise of his father Bindusara. He ruled for about 37 years (C. 273-236 BC) and after the conquest of Kalinga war there was sudden change of heart. He performed various welfare activities for the state and issued many rock edicts. Except in the Minor Rock Edicts of Maski and Gujara, Ashoka is throughout referred as Devanampiya and Piyadasi, which literally means as 'Beloved of Gods' and 'one of amiable look'.

CONCLUSION

It is, therefore, safely concluded beyond doubt that Emperor Ashoka neither suffered from von Recklinghausen disease type-1 nor any seizure or bony deformity of TSC as suggested by Wig *et al.*, 2015. It's not *true* that Ashoka had von Recklinghausen disease. Had he suffered, then he should have been advised not to have children, as fertility in male is reduced when the disease progresses. It's *true* that Ashoka exists as a historical figure but it's *false* that he had mental retardation or short stature, learning disorder and ADHD. The truth-function of proposition is expressed as: (T FT T) (p, q): If p then q. (p \supset q) and aforementioned evidences prove its falsity. Thus, the premise whether Emperor Ashoka suffer from von Recklinghausen's disease should be rejected. The possibility of what if Ashoka as a historical legend is false? And the impersonated person had von Recklinghausen disease then it is a true for the presentation of disease or if the impersonated person doesn't had von Recklinghausen disease then both cause and effect are absent, which is a true statement but not applicable for the current analysis. What if Wig *et al.*, 2015 maintain that there is something and which we maintain there is not? It would appear, if the reasoning were sound, that in any ontological dispute the proponent of the negative side suffers the disadvantage of not being able to admit that his opponent disagrees with him. Let the dispute rest in peace with an adage "The Lips of the wisdom are closed, except to the ears of understanding."- Kybalion.

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