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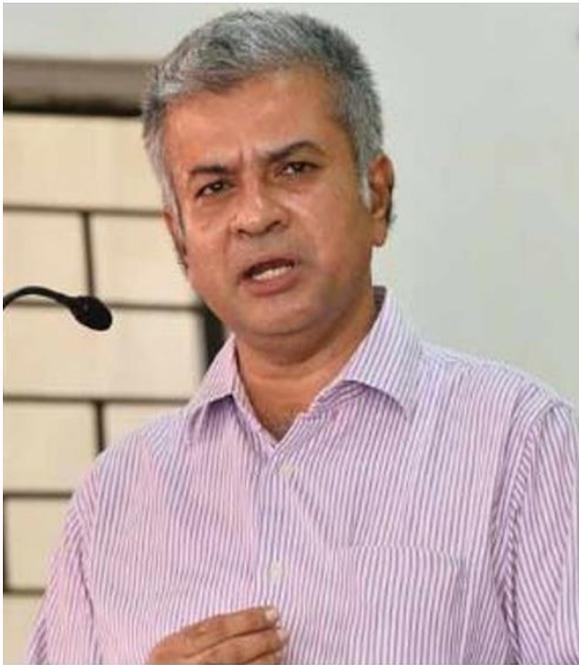
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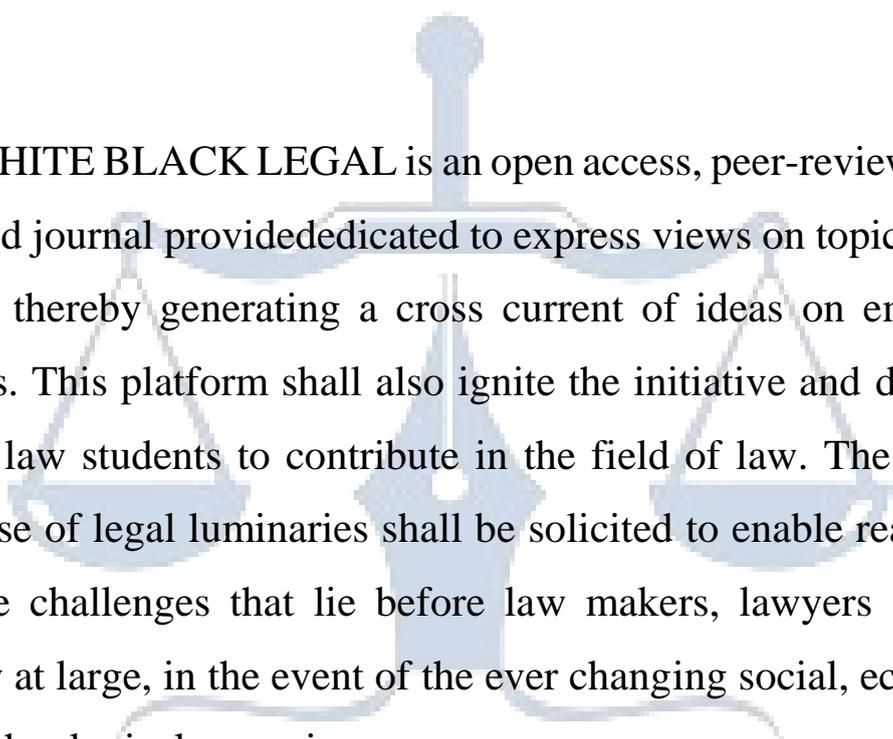


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With this thought, we hereby present to you

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BLENDING TRADITIONAL INDIAN KNOWLEDGE **WITH AI: MANAGING DIGITAL ECONOMY** **OPPORTUNITIES AND ETHICAL CONSIDERATIONS**

AUTHORED BY - MS. RASHI MAKHIJA & MS. DEEPSHIKHA

ABSTRACT

Artificial intelligence (AI) develops rapidly and relies on large amounts of data, including indigenous knowledge (IK) and genetic resources. In India, traditional knowledge of the purposes and cultural practices of medical plants has been passed down in the local community for generations. However, large corporations and researchers often use this knowledge without proper consent or approval, leading to problems of misunderstanding and exploitation. An important feature of this contract is the obligation to disclose the source of information and that companies and researchers using Indigenous knowledge or genetic resources must disclose the necessary permissions. This helps to recognize the contributions of Indigenous people and ensure fair benefits.

Indian laws also provide protection. The 2002 Biological Diversity Act requires prior approval from the national biodiversity authority before access to genetic resources and traditional knowledge. Similarly, the traditional digital library (TKDL) of the Digital Library prevents patenting of Indigenous knowledge without consent. The Indian Patent Act of 1970 continues to restrict patents of traditional knowledge unless there is an inherent innovation.

It is important to include this protection in AI development. If AI models use Indigenous data, communities need to inform and benefit from their use. The legal framework must ensure that AI does not continue its historical patterns of exploitation. By enforcing disclosure requirements and shares of performance mechanisms, India can promote ethical AI practices and at the same time protect Indigenous rights in the digital economy.

BACKGROUND

India's knowledge, from ancient scriptures, philosophy, and practical wisdom, has been handed down for thousands of years. This passed down deep tradition has shaped Indian civilization

and still impacts many domains of study. Now, India has shifted towards more modernized technology like integrating artificial intelligence (AI) into its operations. A more radical form of technology AI allows machines to learn and make decisions like human beings. Fascinatingly, ancient Indian knowledge and AI are blending in innovative ways that seem to make out of this world possibilities attainable. This combination can do wonders in aiding India achieve significant development in technological advancement.

The digital economy has changed the job of businesses and achieved new growth opportunities. However, traditional knowledge and cultural practices are often used by businesses and researchers without proper recognition or benefits, which creates problems for Indigenous communities as well. Now, when AI begins this knowledge, there are great questions about who belongs as to who controls it and who should benefit from it. The World Health Organization (WHO) estimates that the global market for traditional medicine is worth more than US\$100 billion¹. However, Indigenous communities rarely receive fair compensation for their knowledge. This is because your knowledge is often considered to belong to everyone, not as you claim to own property and can benefit from it.

This article focuses on how the knowledge AI and traditional Indian philosophies can be blended to create astonishing opportunities.

JUXTAPOSING OLD-WORLD WISDOM WITH NEW-AGE SCIENCE

Ancient Indian knowledge is largely holistic, explaining everything from philosophy, ethics, life, and the universe in the Vedas and Upanishads. The values and principles of Dharma (Right Conduct), Karma (Cause and Effect), and Yoga (Union) have served as guiding lights for society over centuries.

Now, consider modern technology, particularly Artificial Intelligence (AI). Parallels can be drawn with deep Indian wisdom. AI is not simply about computers. It is a blend of science, mathematics, neuroscience, philosophy, and Indian wisdom that merges various aspects of life into one.

¹ Amit Srivastava, "Healthcare: USD 100 billion nutraceutical market of India: An opportunity in making" *The Financial Express*, 8th Sept, 2021.

Responsibility and ethics in the use of AI technology is one of the major issues of concern in the world. In contrast, Indian philosophy has always focused on more moral values and making ethical decisions. Such values can steer the development of AI in a positive direction.

Ultimately the most significant takeaway is that ancient wisdom and modern technology are not as far removed as one might think. They are equally at the service of improving human condition – the former through contemplative practices and the latter through innovative means.

ECONOMIC BENEFITS OF PROTECTING INDIGENOUS KNOWLEDGE

Indigenous Knowledge refers to wisdom, traditions and practices developed by Indigenous communities across generations. This knowledge protection not only brings important economic benefits to Indigenous communities, but also great economic benefits to the local economies.

1. Fair payment for local knowledge

Many companies and industries use indigenous knowledge for herbal medicines, agriculture, environmental protection, and more. If your Indigenous community has legal rights to your knowledge, you can negotiate a fair payment for your use. This will help you receive a legitimate share of your profits and reduce poverty and financial struggles.

2. Other Employment Opportunities

IK protection can create Indigenous employment in areas such as environmental protection, cultural education, and sustainable business practices. More jobs mean lower unemployment rates in Indigenous communities and improved financial stability.

3. Increase in cultural tourism

Tourists are often interested in indigenous culture, traditions and handicrafts. By protecting their knowledge, Indigenous communities can control how their culture is shared and earn money from tourism activities such as tours, traditional crafts, and cultural achievements. This benefit both the local economy and the Indigenous people.

4. Sustainable opportunities for a living

Many Indigenous communities are based on nature for their livelihoods, including agriculture, fishing, and Chinese herbal medicine. IK protection will allow these

practices to continue sustainably, allowing local governments to make a living and at the same time maintain the environment for future generations.

5. Promoting innovation and business growth

Indigenous knowledge contributes to the development of new medicines, organic farming technologies and environmentally friendly products. With this knowledge protection, Indigenous communities have found companies based on tradition to compete in modern markets and promote economic growth.

6. Low dependence on external help

If Indigenous communities make money with knowledge, they do not rely on state support or foreign help. This strengthens their independence and allows them to develop their own economy based on their cultural strength.

7. Other Economic Possibilities for Women

In many Indigenous communities, women play an important role in maintaining their traditions and in continuing more traditions. IK protection allows indigenous women to use the methods they know, selling their own businesses, handicrafts, and working in cultural tourism.

8. Improved financial management and community development

Legal protection of knowledge allows Indigenous communities to ensure that money from tradition is used to develop community schools, health centers and infrastructure.

It also promotes superior government by ensuring transparency and fairness in decision-making.

PHILOSOPHY OF AI AND INDIGENOUS KNOWLEDGE IN INDIA

Who knew that women's body has a connection with our moon and how ancient/ scientific Indian civilization was obsessed over the auspicious number 108 which denotes "life on earth." Unlike modern science, *Ayurveda* believes that your food is your medicine. The first case of PCOD was detected in year 1935 and today one out of 5 Indian women suffers from PCOD². This is because of our fast-moving lifestyle. Today, consumerism of Teflon, non-stick cookware or single use plastics brimming in Indian consumer is the biggest reason for this³.

² Bhumika Pruthi, "One in five Indian Women suffers from PCOS", *The Hindu*, 26. 09.2019, available at <https://www.thehindu.com/sci-tech/health/one-in-five-indian-women-suffers-from-pcos/article29513588.ece>, (last visited 16.05.2023)

³ Colln O'Neil, "FDA Tests Confirms Suspicions about PFAS Chemicals in Food", *EWG*, June 03, 2019, available at <https://www.ewg.org/news-and-analysis/2019/06/fda-tests-confirm-suspicions-about-pfas-chemicals-food> (last visited on 16.05.2023)

Modern science still has not found the cure for this serious disease of PCOS but here is when *Ayurveda* comes to rescue.

Everyone including us Indian are still following a wrong calendar even today. My younger brother once asked me that why we have population census in year 2021? Is government late by one year because decades means a gap of 10 years, so decade should end in 2020? Actually, no. The decade will start on 1st January, 2021 because “there was never a year zero and year 1BC was followed by year 1AD⁴ (Roman numerical has no zero). I guess that is why the scientist Albert Einstein quoted that “we owe a lot to Indians, who taught us to count without which no worthwhile scientific discovery could have been made”.⁵

Likewise, is the sacred number of 108 in ancient civilization has any connection with the life on earth? Yes because, without this number there would be no form of life on earth. This sacred number is everywhere in India. If someone asks how many times do we have to chant mantra then the answer will be 108 or how many times you have to circle around a shrine, the answer will be 108 times. We have 108 transition in Indian classical dance and 108 *talas* in Indian classical music. Everything which is designed in India is linked with auspicious number 108.

Sanskrit and *Tamil* speaking civilization or Santana were obsessed with number 108 but why? Typical answer by any average intelligent person would say that people around the world are obsessed with various other numbers as well like 13 or 3 or 8 but this 108 is an ancient scientific number and it is no coincidence because this number is the ‘basis of life’. Without Sun, we and even plants animals and other beings would not survive a single day that is why sun is so special to every species on earth. It is sun and moon because of which there is life on earth. Because of number 108, we are lucky that earth is not too hot and not too cold unlike other planets in our solar system. But how and why only 108?

A healthy person will breathe 108 multiplied by 100 times during sunshine (12 hours) and the same times during moonshine (12 hours).⁶ At first it can be a coincidence but if we look at the

⁴ Marshall Shepherd, “Is 2020 the start of a new decade? A human technical and climate perspective”, *Forbes*, Jan 1, 2020, available at < <https://www.forbes.com/sites/marshallshepherd/2020/01/01/is-2020-the-start-of-a-new-decade-a-human-technical-and-climate-perspective/#36fbee50ee2f> (last visited on 16.05.2023)

⁵ Quotes on India, “My India My Pride”, *Know India*, available at <https://knowindia.gov.in/my-india-my-pride/quotes-on-india.php>

⁶ Murali Sundaram, “108 Breaths per day- Route to Enlightenment”, *Medium*, 08.04.2016 <https://medium.com/@happynesscoach/108-breaths-per-day-route-to-enlightenment-f4500ba86f5> (last visited on 17.05.2023)

sun and moon from earth, we see them as the same size objects and this coincidence is only special for planet earth because if we are standing on mars then a moon would look like a dot and sun will look like a gigantic orange. But why this is number is so special only for earth? Why we see moon and sun as the same size even though the sun is 400 times larger than a moon? Because of the number 108. The distance between earth and sun divided by the diameter of the sun equals 108.⁷ But it can again be a coincidence but no as I said earlier that why moon appears to be same as sun because the distance between the earth and moon divided by the diameter of the moon is *also* 108. They are designed in a way that they appear the same size to us and this is the only reason that life exists on earth⁸. This same ratio of 108 gives life on earth. *Ayurveda* affirms that humans and even different species have a special connection with our moon. But how? The moon revolves around the earth and takes 28 days approximately. A healthy woman would have exact 28 days of reproductive cycle, same as our moon. And even the gestation period for humans is of 28 days into 10 times the period of lunation. And it is not just for humans but even for animals like a dog or cat will have a gestation period of 28 days into twice the period of lunation. How? Because we are very much dependent on our moon. For example, a cow will have a gestation period of 28 days into 10 times of period of lunation which is exactly same as in case of humans. So, in simple language, the moon is the basis of reproduction, life and fertility and it is because of number 108. Without the moon there is no reproduction on planet earth and science accepts that in the case of worms.⁹

That is the reason because if we visit *ayurveda* doctors for PCOD problems they will prescribe us to eat healthy, change our routine, avoid plastic, do yoga and the most important thing will be to sit under the moon on certain days which would regulate our menstrual cycle. But how? Because of moon gravity or moonlight. Our body has connection with our moon. That is why Praveen Mohan said we have nightclubs instead of dayclubs¹⁰. And this is not only in human species but in every other species including marine animals. And what if the ratio of 108 changes or suddenly if moon disappears then what will happen? Everyone will become 'luna'tics¹¹. But this is not the case. Because of moon, earth has a slight certain tilt and because

⁷Jai Paul Dudeja, "Spiritual and Scientific significance of the number 108", *International Journal of Yogic, Humans Movement and Sports Sciences*, 2018; 3 (1): 611-615. Available at <http://www.theyogicjournal.com/pdf/2018/vol3issue1/PartK/3-1-114-754.pdf>

⁸Praveen Mohan, "108- The Secret of Life?" *YouTube*, 03.05.2020, available at <https://youtu.be/CUxg9iZ0IxU>

⁹Cesare Barbieri, Francesca Rampazzi, "Earth-Moon Relationships: Proceedings of the conference held in Padova, Italy at the Accademia Galileiana di Scienze Lettere e Arti", November 8-10, 2000

¹⁰*Id.*

¹¹Luna means Moon

of that tilt we have seasons. Moon controls this tilt of the earth. Venus and mercury does not have moon that is why these planets does not have any seasons. If moon disappears or does not follow the number 108 then earth would have 6 months of daytime and 6 months of nighttime, tsunamis, icebergs on equators and even desert. This means that if there is like 2 3 degree of variations in this number 108, we will have no life on earth.

Even the *panchalinga* or the Pentagon' shape¹² has 108° on every side. Every math or science student can relate 108 with the golden ratio because 108 is the basis of life. Even in ancient temples, the architects or the archaeologists used this number. Most ancient temples used this number as the height of 108 or 108 into 2 times. This number's traditional significance is humungous. But today this traditional knowledge is vanishing from our minds.

This number is made from 12 into 9 and in ancient texts we have 9 *grahas* or 12 *rashis* or 9 days fasts (*vrats*) or 9 *purans* or 12 hours of daytime and 12 hour of night time etc. Even today, there are a lot many Indians especially southern Indians who do not eat rice on 11th lunar day or *ekadashi* because “the moon has a strong influence on our body.”¹³

Even in the case of *Tulsi*, when suffering from cold, our grandparents or parents recommended to take this medicinal herb, *Tulsi* but scolded us for chewing *Tulsi* and deduced us to swallow it but why? Because according to botanists, *Tulsi* has a huge amount of mercury in it¹⁴ and applying raw mercury on our teeth, our teeth will start falling immediately. *Tulsi* does the same thing to our teeth. From parents telling us not to pluck out any flower/ leaf in the evening time or from tradition of applying *Bindi*, *Sandal Paste*, *Tilak* or any kind mark on forehead¹⁵ or one should not sleep under tree at night¹⁶ or tying Mango¹⁷ and *Neem*¹⁸ leaves on entrance door

¹² American Defense Department

¹³Chinmayi, “The scientific and spiritual significance of fasting on 11th lunar day (Ekadashi)”, *Medium*, 07.01.2023, available at <https://medium.com/@chinmayi.kanugonda/the-scientific-significance-of-fasting-on-11th-lunar-day-ekadashi-b66cd8c867d4>

¹⁴Marc Maurice Cohen, “Tulsi- *Ocimum sanctum*: A herb for all reasons” *J Aryurveda Integr Med*. 2014 Oct-Dec; 5(4): 251-259, available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4296439/> (last visited on 19.05.2023); NDTV Food Desk, “Why are we often told not to Chew Tulsi Leaves?” *NDTV Food*, 23.11.2017, available at <https://food.ndtv.com/food-drinks/why-are-we-often-told-not-to-chew-tulsi-leaves-1735329> (last visited on 16.05.2024)

¹⁵According to yoga, there are three *Nadis* namely *Idaa*, *Pingalaa* and *Sushumna* that run through our forehead, so by applying Sandal Paste or *Tilak* or *Bindi* with fingers will keep the *Nadis* operative.

¹⁶The photosynthesis of plants and trees stops at night and that is why they exhales deadly amount of CO₂ which is opposite of what human inhales i.e. oxygen.

¹⁷ K. S. Shivashankara, “Inhibition of Photosynthesis by flowering in mango (*mangifera indica* L.). A study by gas exchange methods” *Scientia Horticulturae* 83(3); 205-212.

¹⁸Ugwu, Celestina, “Antimicrobial Activity of *Azadirachta indica* (Neem) Leaf Extract on Some Bacteria”, *International Journal of Current Microbiology and Applied Sciences* 8 (August 2024)

during auspicious days or joining both palms¹⁹ to greet others or applying turmeric²⁰ on our skin while bathing or eating curd²¹ before going to exam or throwing coins²² into the river or to do *aarti*²³ when anyone come from outside has scientific reasons behind all these Indian traditional knowledge. Even in Modern India, people still keep *aloevera* plant, *peepal*, orchids or *neem* because it is linked with the Indian traditional knowledge.

So, our ancient *Sanskrit* and *Tamil* (sages or alchemists) scientific knowledge is so fascinating that is the reason we have a responsibility towards them and give recognition to them around the globe. The reason I am stating this ancient knowledge because these knowledges might not be written in our school texts books but Indians have been following these for years because this traditional knowledge has been passing on for generations to generations.

But in modern times, western science (which happened in case of turmeric, *basmati* or *neem*) misappropriates Indian Traditional knowledge so through AI we can revoke the patents based on traditional knowledge. Digital libraries and classification system use AIS which acts as the collection of ancient traditional texts.

HOW INDIGENOUS KNOWLDGE IS USED IN AI WITHOUT ANY CREDIT

Indigenous communities have been growing knowledge over the younger generation about farming, environmental sustenance, medicinal practices and technology for several centuries. Such knowledge is central to inform technologies of modern era notably in precision agriculture, smart farming, and medicinal research. However, there is a form of development that is often referred to as artificial intelligence (AI) which uses indigenous knowledge unilaterally without any recognition or compensation to the native community. This leads to unfair exploitation. Numerous AI powered farming technologies leveraging local knowledge are emerging to enhance production and sustenance of food. In East Africa, for instance, there are AI farming applications that help farmers oversee soil conditions, climate forecasts and

¹⁹ Tips of the Hand are pressure points for brain, eyes and ears.

²⁰ Turmeric is anti-bacterial properties.

²¹ Curd has good bacteria namely *Lactobacillus Bulgaricus* which avoids any digestion problem.

²² Ancient people used copper made coins so that is why they used to throw copper coins to cleanse the water. Copper has anti-bacterial property that is why use copper coated membranes.

²³ Any person coming from outside brings small bacterias which are not visible through human eye. So, the tradition of doing *aarti* is to kill the bacteria or micro-organisms around our face.

plant ailments. These applications are dependent on rural farmers, particularly women, who possess a wealth of information regarding soils, weather conditions, and plant health indicators. Despite the recognition and contributions that these farmers offer, they remain passive users of AI and are deemed 'beneficiaries' of the technology instead of co-creators. Thus, there is a liquidity where indigenous communities provide valuable information and data yet remain underpaid for their input.

A well-known example is Plantvillage Nuru in Kenya. This is an AI application in which system diseases are recorded using machine learning. The technique is based on thousands of photographs of plants featured by local farmers. These photos will help AI recognize a variety of plant diseases and make them a powerful tool for small farming. Instead, AI developers often extract this knowledge without proper awareness, or share benefits with Indigenous farmers. This continues a long history of knowledge about colonial knowledge, in which valuable information from local people is adopted without fair compensation.

Why is this important? Is your knowledge being used? Ethical AI development must include appropriate credit, approval and financial benefits for those who convey the basic knowledge that enables these technologies.

The question of traditional Indian knowledge, especially plants such as neem and turmeric, and how it relates to colonialism and rights to intellectual property (IPR) is complicated.

1. Traditional Knowledge and Colonialism - Traditional Knowledge refers to wisdom and practices passed down over generations. Plants such as neem and turmeric have been used in medicine for centuries. During the British colonial rule of India, much of this knowledge was passed down to the British. The British benefited from this, but those who originally maintained this knowledge were not properly recognized or compensated. Neem and Turmeric Patent Issues Neem and Turmeric are two plants that have become the focus of legal struggles (legal rights to inventors). However, in the 1990s, American companies tried to patent how to kill pests using neem oil problem? The use of neem for this purpose was already known in India! India protested, saying that the use of neem is thus a part of traditional knowledge and should not be patented by those who did not invent it. After a long battle, the US company lost its patent. However, in the 1990s, US patented turmeric researchers were due to his wound healing

properties, but Indians were already using it for this purpose. The patent has finally been taken away.

2. The Impact of IPR on Traditional Knowledge - The rights of intellectual property (IPR) must protect the inventor, but are not always suitable for traditional knowledge. Traditional use of plants such as neem and turmeric does not always meet the strict requirements of patents. This situation is called biologicalization, in which companies employ natural resources or traditional knowledge and benefit from them, without giving back to the original community.
3. India's Reaction - India has worked hard to protect traditional knowledge. The key step was to create a traditional digital library (TKDL). This library records all the traditional knowledge of plants and drugs, making it easier to prove that these things have been known for a long time before someone attempts to patent them. India has worked internationally to change patent rules to prevent traditional knowledge from being stolen by foreign companies. This helps to maintain the benefits of the community.
4. Big Picture - The struggle for neem and turmeric shows a bigger problem. What is the knowledge passed down over generations? How can we confirm that people who have used these plants for centuries are rather recognized and compensated? India is fighting to prevent foreign companies from patenting what is already known in India, and is working to ensure that traditional knowledge is respected and protected. This is to find a fair way to coordinate innovation in relation to knowledge passed down over generations.

CONCEPTUALIZING AI-TRADITIONAL KNOWLEDGE

According to D.P. Aggarwal in his journal²⁴ he describes the traditional knowledge system and western science that “*should we allow the non-literate knowledge systems developed through the millennia, transmitted through word of mouth, tested through trial and error, to vanish without even trying to verify such knowledge? In this note we plead the case of other knowledge systems to bring them within the ambit of science*”²⁵

In simpler sense, traditional knowledge is the tradition based scientific works or undisclosed information that has been intellectually followed by a culturally oriented or culturally based

²⁴A. P. Agarwal, “Traditional Knowledge Systems and Western Science”, *Current Science*, vol. 73, no. 9, 1997, pp. 731-733, JSTOR www.jstor.org/stable/24100404, (last visited on 18.05.2024)

²⁵Sokolowski, Robert. “Natural and Artificial Intelligence” *Daedalus*, vol. 117, no. 1, 1988, pp. 45–64. JSTOR, www.jstor.org/stable/20025138 (last visited on 19 May 2024)

group for centuries.²⁶ Tradition based means that knowledge or cultural expression system which is being transmitted from generations to generations. Traditional knowledge in IP prevents unauthorized use of TK and there can be more exploitation of TK by the originating community.²⁷

Section 3(p) of Indian Patent Law does not give patent protection for the TK. For example, the Turmeric case where CSIR²⁸ filed a case in USPTO that turmeric or saffron-colored rhizomes which has a unique property to heal wounds is a medicine already written in ancient Sanskrit texts. *Neem* and *Jeevani* case are famous cases with respect to Traditional Knowledge of India. The Traditional Knowledge Digital Library is a cooperative project of CSIR Government of India and Ministry of AYUSH to collect the traditional knowledge existing in various parts of India in the form of various languages like Sanskrit, Tamil, Hindi, and Urdu to serve as a reference of prior arts for patent examiners at International Patent Offices.²⁹ Further, TKDL has a classification system named Traditional Knowledge Resources Classification which has classified the traditional medicinal system in *Aryurveda*, *Unani*, *Siddha* and *Yoga*.

In 2019, CSIR and C-DAC³⁰ signed a memorandum “for co-operation related to modernization of CSIR-TKDL and for the development of state-of-the art” by using futuristic technologies like Big Data analytics, language tools, information processing tools and Artificial Intelligence to prevent misappropriation of the Indian medicinal knowledge at IPOs.³¹

Computer scientists are analyzing the ancient sacred texts but what it has to do with artificial intelligence? Scientists use ancient Sanskrit texts to teach ethics to AI³². Scientists from TU Wien are using Mimamsa³³ to draw ethical rules for DL and ML. Even India legislator while framing the legal framework for AI may use ancient Sanskrit and Tamil Texts because a wise

²⁶ Elizabeth Verkey, “*Law of Patents*”, pp. 103 (Eastern Book Company, Lucknow, 2nd Edition, 2012)

²⁷ Suchi Rai, “Traditional Knowledge and Scope for Patent Protection”, *Mondaq*, 30.01.2018

²⁸ Council Scientific and Industrial Research, New Delhi

²⁹ *Ibid*

³⁰ Centre for Development of Advanced Computing which is the autonomous scientific society of Ministry of Electronics and IT, Pune.

³¹ Jyoti Singh, “CSIR & C-DAC Sign MoU to upgrade tech of Traditional Knowledge Digital Library for medicine”, *Indus Dictum*, 29.11.2019, available at <https://indusdictum.com/2019/11/29/csir-c-dac-sign-mou-to-upgrade-tech-of-traditional-knowledge-digital-library-for-medicine/> (last visited on 18.05.2024)

³² Janice Friedman, “Scientists use Ancient Vedic Sanskrit Texts to teach ethics to Artificial Intelligence” *Ancient Code*, 29.06.2018, available at <https://www.ancient-code.com/scientists-use-ancient-vedic-sanskrit-texts-teach-ethics-artificial-intelligence/> (last visited on 18.05.2024)

³³ Philosophical school in ancient Indian Civilization

person once said that “*who looks outside, dreams; who looks inside, awakes.*”³⁴

The Indian regulatory framework for traditional knowledge and the protection of biological diversity is comprehensive and complex. Essentially, the Biodiversity Act, 2002 aimed at conserving biological resources, sustainable use, and ensuring fair and role. NBA admission is mandatory for all research, commercial use or applications of intellectual property with Indian biological resources.

To prevent biological properties, the Indian government has set up a traditional digital library (TKDL) for Traditional Knowledge (TKDL), a database that documents illegal patents integrated with traditional knowledge. Protocol aims to promote fair and fair division of benefits arising from the use of genetic resources. Geographical signs (registration and protection) of products from 1999 protect traditional knowledge related to geographic adaptation.

The most recent major change to the International Regulations (IP) on the Protection of Intellectual Property is a new contract passed by the United Nations World Organizations on May 24, 2024 (WIPO)³⁵. This contract is special for the first time in both traditional knowledge and genetic resources. Patent: When someone applies for a patent (legal protection of an invention), they must disclose where they received their genetic resources or traditional knowledge. This prevents businesses from secretly using local knowledge without a loan. Make sure Indigenous and local communities receive the credits and benefits you earn when your knowledge and resources are being used worldwide.

CONCLUSION

In the mid of pandemic, people around the globe realized that shaking hands, hugging and kissing on cheeks/ hands can spread virus. But we Indians greet everyone with Namaste. And because of that, various political leaders like American President Donald Trump, Israeli PM Benjamin Netanyahu or UK’s Prince Charles started using Indian greeting, Namaste.³⁶ That is accepting the Traditional Knowledge.

³⁴*Ibid*

³⁵ Landmark UN Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge," *Secerna* 18th June, 2024.

³⁶Times Travel, “COVID-19: How Indian Namaste has become a hit across the world” *The Times of India*, 01.04.2020, available at <https://timesofindia.indiatimes.com/travel/destinations/covid-19-how-indian-namaste-has-become-a-hit-across-the-world/as74932428.cms> (last visited on 18.05.2024)

It is so fascinating that just following our ancient habits of Indian scientific civilization is the solution to all problems. Therefore, when various countries' universities around the globe are taking ancient Indian texts to teach ethical rules to artificial intelligence, Indian universities or other scientists can analyze what is so amazing about our ancient scientific civilization and how it can lead to frame the legal laws for AI.

One way to look at this can be a joint effort by the Indian Government, central and state universities and more importantly private sector towards making our data on ancient texts in *Tamil* and *Sanskrit* available in terms of A.I. so that in-depth analysis and study for such languages becomes hassle free in the long run. Prominent individual scholars in the field from across the world can be invited for their contribution to its development. That way the big data that we have on our hands is fed to DL/ML, to further enhance our understanding on the plethora of traditional practices, which can further improve access to this mountain of knowledge left to us and prevent any form of misappropriation of the knowledge that rightfully originated here in India. In summary, indigenous knowledge protection is extremely important for promoting ethical AI practices and for protecting Indigenous rights in the digital economy. The Indian regulatory framework provides an important model to ensure protection and fair benefits of Indigenous Knowledge. India can promote ethical AI practices by implementing disclosure obligations and performance participation mechanisms, while simultaneously protecting the rights of the digital economy.