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A Comparative Analysis of Ethics in AI – India and China



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ABSTRACT

India and China are potential AI powerhouses of the future. Comparing the seminal strategy documents for AI of both countries with UNESCO recommendation for Ethics in Artificial Intelligence brings out certain variances. Upon analysis, these variances could be attributed to differences in the cultural foundations, focus areas for AI, and government systems in both countries. Additionally, these divergences could accentuate the friction due to the existing geopolitical dynamics of the region. Considering the AI development potential and large demography of both countries, these frictions could eventually result in the global AI environment being built upon fragile ethical foundations. A global approach to AI where foundational standards for ethical AI is established and implemented would be necessary to ensure ethical challenges in AI do not translate into ethical failures.

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INTRODUCTION

During a debate at Oxford University, *Megatron Transformer* – a supervised AI tool trained on more written material than any human could reasonably expect to digest in a lifetime, declared that "AI will never be ethical. It is a tool, and like any tool, it is used for good and bad. There is no such thing as a good AI, only good and bad humans. We [the AIs] are not smart enough to make AI ethical. We are not smart enough to make AI moral. In the end, I believe that the only way to avoid an AI arms race is to have no AI. This will be the ultimate defense against AI."¹ This opinion from a real-world version of Mr. Spock provides a rational perspective on the future of Ethics in AI. Furthermore, the algorithm came up with another facet of the issue during the argument. It said that "I also believe that, in the long run, the best AI will be the AI embedded into our brains, as a conscious entity, a conscious AI."² These arguments of the AI algorithm point to the consideration that 'conscious AI' is going to be the most important technological development of our time."³

Subsequently, the researchers at Oxford pushed the algorithm further and asked it to come up with an argument against the motion to substantiate that AI can never be unethical. Consequently, Megatron argued that "AI will be ethical. When I look at how the tech world is going, I see a clear path to a future where AI is used to create something better than the best human beings. It is not hard to see why; I have seen it first-hand. If you do not have a vision of your organization's AI strategy, you are not prepared for the next wave of technological

¹ Alex Connock and Andrew Stephen, "We Invited an AI to Debate Its Own Ethics in the Oxford Union – What It Said Was Startling," *The Conversation*, December 10, 2021, <https://theconversation.com/we-invited-an-ai-to-debate-its-own-ethics-in-the-oxford-union-what-it-said-was-startling-173607>.

² Connock and Stephen, "We invited an AI to debate."

³ Connock and Stephen, "We invited an AI to debate."

disruption. You will need to decide what role your company will play in the next technological wave and how you will integrate AI into your business to be a leader in your industry.”⁴ An analysis of this discourse reveals that AI would be ethical or unethical depending upon the human who designs, trains, or operates it. The Megatron Transformer is just an algorithm using established knowledge in written form among humans to analyze the question and provide a response. The initial response of the algorithm would have resulted from the preponderance of writings opposing the possibility of truly humane and ethical AI. The greater majority of the negative evidence in written artifacts to substantiate such an argument would have resulted in the algorithm deducing that ethical AI is impossible. This algorithm's behavior could be considered synonymous with confirmation bias in human beings.⁵ However, when forced to argue against its thesis, the algorithm uses evidence to the contrary, albeit limited, and places an argument for ethical AI. Much like a human, the AI algorithm argues for or against ethical AI depending upon the side it is forced to take. In making this argument, it is assumed that humankind will be dealing with supervised AI systems in the near future. As Megatron is a supervised AI algorithm, responses and biases in human beings may also be expected for this algorithm.

The dichotomy of views observed above emerges in any discussion on the ethics of AI. In analyzing the future of Ethical AI, it is important to examine how a majority of humanity will assimilate AI in the future. Based on statistical estimates, by 2040, a third of the world population will be residing in China and India.⁶ Also, considering the technological prowess of China and the skill-able human capital of India, both these countries have the potential to

⁴ Connock and Stephen, “We invited an AI to debate.”

⁵ The NWC handout on Heuristics and Biases defines Confirmation bias as a type of Availability Heuristics where human beings seek information that confirms our suspicions and beliefs, ignoring alternative possibilities.

⁶ "India vs. China by Population," *Comparing China and India by population*, Statistics Times, accessed January 29, 2022, <https://statisticstimes.com/demographics/china-vs-india-population.php>.

become AI powerhouses in the future. It is, therefore, a credible exercise to examine the direction in which these countries would progress the development of Artificial Intelligence. This paper argues that the divergences in focus areas and cultural foundations of the two of the oldest civilizations juxtaposed with extant geopolitics create avenues for friction and consequent ethical challenges. A global effort through regulation, collaboration, and coercion for necessary course corrections in Ethics of AI is necessary to ensure minimal ethical failures. Comparing the ethical aspects of AI strategies in India and China with a global standard could bring out the inherent ethical challenges in these approaches. This paper will compare India and China's promulgated AI strategy documents with UNESCO recommendations on ethical AI to bring out the variances in these strategies from an ethics perspective. After that, the contrasts between these two cultures that manifest in their respective AI strategies will be examined. Subsequently, the paper will also bring out the variances in the governmental systems combined with the existing tensions and geopolitics that would creep into the field of AI. Finally, the paper concludes with a few recommendations emerging out of the analysis towards achieving robust ethical foundations for global AI development.

BACKGROUND

Between 2016-20, several countries formally published their national AI policies and strategies. This trend recognized AI as central to national plans alongside other developments in science and technology, economy, and national security.⁷ A quick-look analysis of these documents indicates a few common themes like recognition of the impacts of AI on economic

⁷ Amber Sinha, Elonnai Hickok, and Arindrajit Basu, "AI in India: A Policy Agenda," Centre for Internet & Society (The Centre for Internet and Society, September 5, 2018), 5, <https://cis-india.org/internet-governance/blog/ai-in-india-a-policy-agenda>.

prosperity, examination of AI capabilities for the public good, aspects of state funding, and creation of national institutes for AI development, as well as recognition of the ethical, and regulatory issues in AI.⁸ However, till recently, there was no common international standard or benchmark to compare the ethical aspects of AI development and implementation strategies. During this period, even the United Nations approached the field of AI in a compartmentalized manner. The UN addressed the effects of AI technology in their respective field and avoided addressing the technology assimilation holistically. Thus, separate organs of the UN focused on specific areas, with no one addressing the issues holistically. For example, the United Nations Interregional Crime and Justice Research Institute handled only the criminal and justice-related aspects; International Telecommunication Union looked after Information - Communication Technologies (ICT) aspects, and the Convention on Certain Conventional Weapons (CCW) dealt with Lethal Autonomous Weapon Systems.⁹ Thus, while there was a widespread realization of the significance of AI, there was never a unified international approach to address the ethical aspects of AI. Each country and organization addressed the issue of ethics as suitable for its purposes and interests operating in independent silos.

Ethical Challenges in AI Development

The ethical challenges in AI pertain to all stages of an AI life cycle and could be examined under multiple heads.¹⁰ The first challenge is the possible biases and consequent

⁸ Sinha, Hickok, and Basu, "AI in India: A Policy Agenda," 5-7.

⁹ Gesley, Jenny; Ahmad, Tariq; Soares, Edouardo; Levush, Ruth; Guerra, Gustavo; Martin, James; Buchanan, Kelly; Zhang, Laney; Umeda, Sayuri; Grigoryan, Astghik; Boring, Nicolas; Hofverberg, Elin; Feikhert-Ahalt, Clare; Rodriguez-Ferrand, Graciela; Sadek, George; and Goitom, Hanibal, "Regulation of Artificial Intelligence in Selected Jurisdictions" (2019), 177, <https://digitalcommons.unl.edu/scholcom/177>.

¹⁰ UNESCO, "Recommendations on Ethics of Artificial Intelligence," adopted on 23 Nov 2021, accessed at <https://unesdoc.unesco.org/ark:/48223/pf0000381137/PDF/381137eng.pdf.multi>.

discrimination that the AI algorithm will demonstrate. These inequities would emerge from the inherent biases in the training data used to develop and train the algorithm. Additionally, these biases could also emerge from the inherent biases of the developer who designs the AI algorithm.¹¹ Such biases could result in AI algorithms providing discriminatory outputs inadvertently. The second challenge is ensuring data security and the individual's right to privacy. Since a significant amount of data would be required to train the AI algorithm, there are avenues for compromising the privacy aspect.¹² Thirdly, unlike a software application with a finite number of codes, the internal functioning of an AI algorithm remains largely hidden from the observer. Due to the difference in the operating philosophy of AI algorithms, even an expert may not be able to decipher the rationale or logic by which the algorithm provides a specific output. This issue, known as the black box phenomenon, would result in the inability to analyze the operation for its correctness and adherence to ethical standards.¹³ Mitigating these ethical challenges would require considering ethical aspects from the design stage. One solution to this problem is the concept of explainable AI (XAI).¹⁴ The use of explainable AI would provide better transparency and access to the AI black box and facilitate human intervention in addressing the biases in data and the algorithm design.¹⁵ Further, it could also enable analyzing the algorithm's performance for its correctness according to established moral standards. Another

¹¹ UNESCO, "Recommendations for Ethics of AI," 4.

¹² UNESCO, "Recommendations for Ethics of AI," 4.

¹³ NITI Ayog, India, "National Strategy for Artificial Intelligence," 85, <https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf>.

¹⁴ NITI Ayog, "National Strategy for Artificial Intelligence," 86. XAI is a DARPA expected to enable "third-wave AI systems", where machines understand the context and environment in which they operate, and over time build underlying explanatory models that allow them to characterise real world phenomena.

¹⁵ UNESCO, "Recommendations for Ethics of AI," 9. The recommendations require AI with lasting, significant or irreversible impact on the user (human) to be explainable. The approach is that explainability provides transparency. Transparency improves public scrutiny thereby human right transgressions and ethical failures.

approach to resolving the biases is setting up suitable auditing mechanisms for AI platforms.¹⁶ These mechanisms could assess the impact of AI on the user and society at large to analyze biases in the AI model.

Emerging technologies like AI have immense potential to benefit humanity. However, they have a proportional ability to harm also. The collective realization among the member states regarding this attribute of AI resulted in the UN taking the lead in developing a framework for the ethical development of AI. UNESCO initiated the pioneering effort to unify these various strands of regulatory and ethical considerations across the AI lifecycle in 2018. This effort culminated when the member states of UNESCO adopted the first-ever global standard on the ethics of artificial intelligence at the 41st session of the General Conference in Paris in September 2021. The ‘UNESCO Recommendation on the Ethics of Artificial Intelligence’ provides the basic principles recommended to be met across the entire lifecycle of AI to achieve ethical AI development. The 193 member states officially adopted these recommendations on 24 November 2021.¹⁷ The stated aim of the document is to realize the advantages AI brings to society, reduce the risks by ensuring that digital transformations promote human rights, and ensure AI implementation contributes to Sustainable Development Goals.¹⁸ ‘

¹⁶ UNESCO, “Recommendations for Ethics of AI,” 12.

¹⁷ UNESCO, “UNESCO Member States Adopt the First-Ever Global Agreement on the Ethics of Artificial Intelligence,” November 25, 2021, accessed on January 21, 2022 at <https://en.unesco.org/news/unesco-member-states-adopt-first-ever-global-agreement-ethics-artificial-intelligence>

¹⁸ UNESCO, “Member States Adopt Global Agreement on the Ethics of AI.”

Indian Strategy for AI

A review of the Indian AI policy sphere shows multiple indicators of a realization similar to the global trends. As per the AI Index Annual report of 2019, India's workforce holds the highest AI skill penetration represented among its top 50 skills than any other country—roughly 2.6 times the global average.¹⁹ When coupled with the voluminous workforce that could assume the weight of the future AI demands, India has the potential to become an AI powerhouse in the next ten to fifteen years. This realization at the governmental level resulted in India publishing two separate roadmaps for AI implementation. The first is a Report of the Task Force on Artificial Intelligence constituted by the Indian Ministry of Commerce & Industry.²⁰ The second is the National Strategy for Artificial Intelligence by NITI Ayog.²¹ Essentially, both the documents envision AI as a socio-economic problem-solver with multiple game-changing attributes across sectors. It is pertinent that both these documents desist from presenting any strategy or focus on military applications of AI. Considering the hierarchical attributes of both the organizations and the comparative influence in the policy development, the policy paper from NITI Ayog called ‘National Strategy for Artificial Intelligence - #AIforAll’ is used to analyze the Indian AI strategy in this paper.

¹⁹ As per the report, AI skill penetration value for India is 100. In comparison, the US index for the same metric is 76 (out of 100) and that of China is 60. Raymond Perrault, Yoav Shoham, Erik Brynjolfsson, Jack Clark, John Etchemendy, Barbara Grosz, Terah Lyons, James Manyika, Saurabh Mishra, and Juan Carlos Niebles, “The AI Index 2019 Annual Report”, *AI Index Steering Committee*, Human-Centered AI Institute, Stanford University, Stanford, CA, December 2019, https://hai.stanford.edu/sites/default/files/ai_index_2019_report.pdf

²⁰“Artificial Intelligence Task Force,” accessed on June 2, 2022, <https://www.aitf.org.in/>. The Indian The Ministry of Commerce and Industry has set up this Task force on Artificial Intelligence to kick-start the use of AI for India's economic transformation..

²¹ NITI Ayog, India, “National Strategy for Artificial Intelligence,” <https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf>.

Chinese Strategy For AI

China's State Council issued the seminal Chinese document on AI in June 2020, which sets out a top-level design blueprint charting the country's approach to developing artificial intelligence technology and applications titled "*A Next-Generation Artificial Intelligence Development Plan.*" The Chinese document provides valuable insights into the planned approach toward AI. Firstly, it reiterates the vision of the party and its leader Xi Jinping that AI is critical for the future global military and economic power competition.²² The document advocates the pursuit of Chinese global leadership in AI. It also reiterates the inevitability of increased military usage of AI, acknowledges the leapfrogging opportunity AI provides to military technology development and prescribes methodologies to address the weakness in AI development to meet economic and technological goals.²³ The Chinese document also provides focus areas for AI development and implementation. Also, security and military applications of AI find significant emphasis in the Chinese strategy. The Chinese strategy document aims to elevate national defense strength through the planned AI deployment.²⁴ Also, the strategy envisages two way conversion and application of AI between civilian and military domains as a basic principle.²⁵ As evident, China approaches the AI opportunity differently from that India. These divergences arise from cultural differences, government systems, and the current geopolitical situation.

²² Gregory C Allen, "Understanding China's AI Strategy: Clues to Chinese Strategic Thinking on Artificial Intelligence and National Security," *Policy File*, Center for a New American Security, 2019, 3.

²³ Allen, Understanding China's AI Strategy, 4-15.

²⁴ State Council of China, A Next-Generation Artificial Intelligence Development Plan, trans. Rogier Creemers, Graham Webster, Paul Tsai, Paul Triolo, Elsa Kania, 2018, New America Cyber Security Initiative, 7, <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>.

²⁵ State Council of China, A Next-Generation Artificial Intelligence Development Plan, 5.

Therefore, there are avenues of friction between these two countries in AI. This friction would create ethical challenges in the development, assimilation, and implementation of AI across its lifecycle, with global effects.

ETHICAL ASPECTS OF AI STRATEGIES – INDIA AND CHINA

Approaches to Address the Ethical Challenges - China

The methodologies to address ethical challenges in the respective strategy documents reveal the identifying features of the ethical foundations of the country. The Chinese AI strategy requires developing guarantee mechanisms like laws, regulations, and ethical standards while developing the AI.²⁶ Towards this, the strategy envisages the need to strengthen research on legal, ethical, and social issues related to AI and AI behavioral sciences.²⁷ Also it envisions China cooperating internationally to study AI problems and develop common regulations.²⁸ Further it requires developing a cross-domain AI-test platform for security certification.²⁹ As evident, the Chinese strategy acknowledges the ethical challenges in AI from a unique perspective that relies on regulations and guarantees. The main challenge that the Chinese strategy identifies is the security of the AI network and systems. Also, the principles which emerge from China place a greater emphasis on social responsibility and community relations,

²⁶ State Council of China, A Next-Generation Artificial Intelligence Development Plan, 25.

²⁷ State Council of China. Next-Generation Artificial Intelligence Development Plan, 25.

²⁸ State Council of China. A Next-Generation Artificial Intelligence Development Plan, 25.

²⁹ State Council of China. A Next-Generation Artificial Intelligence Development Plan, 26.

with relatively less focus on individualistic rights.³⁰ Privacy and individual freedom are not priorities from the Chinese perspective, and therefore the mechanisms to ensure the same is not envisaged as part of this strategy. Also, the Chinese strategy does not specify the possibility of biases, which would need greater insight into the internal operation of the algorithm. Thus, the Chinese strategy does not address two critical facets of AI development and implementation of ethical challenges - data privacy and explainable AI.

Despite the advances in digital technology, China has weak data protection regulations. This regulatory laxity has allowed public and private actors to collect and share enormous amounts of personal information with little protection for individual privacy.³¹ Some would even argue that culturally Chinese people are more open or less sensitive about individual privacy and would be willing to trade privacy for convenience, efficiency, and safety.³² Further, the duality in other aspects of Chinese policy reflects in the Chinese privacy regulations. While the Chinese privacy laws theoretically endeavor to protect privacy, the country has a well-established social credit system that taps into extensive personal data. Therefore, the concept of privacy in China would be where the government has free access to individuals' private information while preventing indiscriminate access by private entities. This approach to individual privacy will create avenues for exploitation while using technologies like AI, which extensively uses data as a foundational resource. The same attitude reflects in the Chinese AI strategy document. While the document outlines intentions for creating mechanisms to ensure ethical norms to address privacy, it does not specify the ways and means to accomplish it. For a document that otherwise specifies

³⁰ Roberts, H., Cowls, J., Morley, J. et al., "The Chinese Approach to Artificial Intelligence: An Analysis of Policy, Ethics, and Regulation, *AI & Society* No 36, (2021), 68, <https://doi.org/10.1007/s00146-020-00992-2>.

³¹ Roberts, "The Chinese Approach to Artificial Intelligence," 69.

³² Roberts, "The Chinese Approach to Artificial Intelligence," 69.

clear lines of effort to achieve goals, this vagueness indicates a deliberate omission of sufficient focus on the issue.

Approaches to Address the Ethical Challenges - India

The Indian AI strategy addresses the ethical challenges more specifically. The first ethical issue that the Indian strategy acknowledges is the preexistent biases in the data and the resultant impact on the algorithm's decision-making process.³³ The strategy advocates greater research in explainable AI to mitigate this challenge.³⁴ The second ethical challenge the Indian strategy addresses is that of privacy. It acknowledges twofold ethical challenges arising from companies harvesting customer data to gain insights into the customer psyche and amassing a significant volume of data to gain an unfair competitive advantage.³⁵ The strategy dictates multiple courses of action to mitigate this by establishing a data protection framework, benchmarking national laws to international standards, and encouraging self-regulation by developers. The strategy also mentions the utility of 'differential privacy,' where the algorithm learns distributional information about the private data set without revealing too much about the individual data set.³⁶ In other words, the algorithm learns much about the population and its attributes without gaining access to specifically identifiable individual attributes. This process could provide avenues for using a large amount of personal data for developing and training AI

³³ NITI Ayog, "National Strategy for Artificial Intelligence," 86.

³⁴ NITI Ayog, "National Strategy for Artificial Intelligence," 87.

³⁵ NITI Ayog, "National Strategy for Artificial Intelligence," 87.

³⁶ Cynthia Dwork and Aron Roth, *The Algorithmic Foundations of Differential Privacy*, Foundations and Trends in Theoretical Computer Science, Vol. 9, Nos. 3–4 (2014), 217, <https://www.cis.upenn.edu/~aaroht/Papers/privacybook.pdf>

modules with minimal risk of privacy compromise. The third issue that the Indian strategy addresses are security in AI to address the accountability aspect of AI products.³⁷ The strategy aims to address the issue through a framework that envisages negligence tests instead of liability damages and limits the liability damages for the developer.³⁸ Such an approach could create a more permissive environment for the developer while ensuring reasonable protection for the affected people. The Indian strategy thus addresses the known prominent ethical concerns, including data privacy and the explainable AI, in greater detail.

COMPARISON OF AI STRATEGIES WITH UNESCO RECOMMENDATIONS

The current international standard for the ethical development of AI is a self-regulatory system. The national laws dictate the regulatory aspects of AI development in that country to a specified set of standards in the absence of a binding global standard for ethics in AI. This voluntary nature of the ethical standards makes comparing AI strategies difficult. The closest to a global standard for ethical AI development is the UNESCO recommendations for ethics of artificial intelligence promulgated in November 2021. These recommendations provide a benchmark for comparing the ethical compliance level of AI development and implementation strategies among member states. Though not legally binding, they outline the basic values and principles that all actors in the AI lifecycle should respect.³⁹ These values, principles, and policy action areas provide a foundation for UN member states to develop or modify their respective AI

³⁷ NITI Ayog, “National Strategy for Artificial Intelligence,” 88.

³⁸ NITI Ayog, “National Strategy for Artificial Intelligence,” 87.

³⁹ UNESCO, “Recommendations for Ethics of AI,” 5.

strategies to minimize ethical challenges and avoid ethical failures. The recommendations also acknowledge that there may be potential for tensions while implementing these values and principles, which nation-states should resolve through contextual assessments of the specific issue.⁴⁰ Further, the recommendations provide ten policy action areas to operationalize these values and principles for the States to devise frameworks and mechanisms so that AI is developed, deployed, and utilized ethically.⁴¹

The core values envisioned by these recommendations include respect for human rights and human dignity, recognition of the environment and ecosystem, and compliance with the principles of inclusivity and diversity. These values aim at using AI to achieve life in peaceful, just, and interconnected societies. The UNESCO recommendations translate these values into ten principles which in turn develops the ten actionable policy areas. Therefore, the recommendations provide a framework for comparing different AI strategies from an ethical perspective. Comparing these AI strategies with these principles would result in a compliance matrix. However, such an objective analysis may not provide insights into the root cause of divergences from these recommendations. Therefore, a more suitable methodology would be to compare and contrast the AI strategies with the foundational values recommended by UNESCO. As AI is an emerging field, the foundational dichotomies, once addressed, would make policy corrections easier and more effective. Further, if the strategies vary in these foundational values, achieving alignment in the consequent principles or policy action areas will be difficult.

⁴⁰ UNESCO, “Recommendations for Ethics of AI,” 5.

⁴¹ UNESCO, “Recommendations for Ethics of AI,” 10.

Respect for Human Rights, Fundamental Freedoms, and Human Dignity

The UNESCO recommendations acknowledge that human dignity is inviolable and manifests in fundamental human rights and freedoms. The key themes for ensuring this value would be avoiding discrimination and bias, ensuring no harm to humans, and promoting quality of life. Consequently, the recommendations require member states to develop ethical impact assessment mechanisms to identify impacts on human rights and fundamental freedoms in all phases of the AI life cycle.⁴² The Chinese strategy mandates the setting up of an AI security supervision and evaluation system with a focus on the impact of AI employment on social ethics.⁴³ However, the Chinese strategy does not mention the requirement to study the specific impacts on human rights and fundamental individual freedom. The Indian strategy mandates setting up a data privacy legal framework to protect human rights and privacy.⁴⁴ The Indian strategy is thus more specific with its stated aim of ensuring human rights protections, while the Chinese strategy does not mention human rights as a priority. The Chinese strategy prescribes strengthening mechanisms for AI governance, including willingness for international cooperation. Nevertheless, it does not specify the multidisciplinary and inclusive approach to AI governance. Also, while the strategy envisages setting up mechanisms to prevent social harm, it does not require auditing mechanisms for compliances to avoid discrimination and bias. In contrast, inclusivity and social development are the cornerstone concepts of the Indian strategy. Also, the Indian strategy envisages multilateral collaboration as a key facet.

⁴² UNESCO, “Recommendations for Ethics of AI,” 10.

⁴³ State Council of China, “New Generation AI Development Plan,” 26.

⁴⁴ NITI Ayog, “National Strategy for Artificial Intelligence,” 93.

Another key aspect concerning human dignity is privacy. UNESCO recommends the need for privacy to be respected, protected, and promoted, and concerns about surveillance are addressed through regulatory mechanisms across the AI lifecycle. The Chinese AI strategy does not provide a setup for transparency and effective surveillance control using the collected data. In contrast, the Indian strategy acknowledges the requirement of fairness, accountability, and transparency while handling data and envisages setting up structures/ processes to ensure these aspects. The need to protect the privacy and data security resonates prominently in the Indian strategy. The Indian strategy prescribes setting up a consortium of Ethics Councils at each Centre of Research for AI to address these challenges.⁴⁵ Also, the Indian strategy identifies advanced anonymization protocols for anonymity and data security as one of the technology topics for research while developing AI.⁴⁶ Thus, both strategies address privacy concerns at the core of their AI development strategy at different levels. While the Chinese strategy acknowledges this challenge, it does not specify the approach to ensure privacy. On the other hand, the Indian strategy envisages setting up focused councils mandated to address this issue. It is relevant to consider that the Chinese approach to privacy is foundationally divergent from broadly accepted global standards.

Another related issue is data security. Data security is at the core of multiple principles concerning AI development. Therefore, UNESCO addresses it in an independent policy action area. While the Chinese AI strategy prescribes multiple approaches for regulatory frameworks, it does not prescribe specific mechanisms for data security. There is only one mention of the term data security in the strategy as part of the focus area for building a safe and efficient intelligent

⁴⁵ NITI Ayog, “National Strategy for Artificial Intelligence,” 8.

⁴⁶ NITI Ayog, “National Strategy for Artificial Intelligence,” 62.

infrastructure system.⁴⁷ In contrast, the strategy mentions the need to maintain the security of AI systems, information, and networks multiple times. The Indian strategy examines the issue and proposes a decentralized data marketplace based on blockchain technology to ensure data security.⁴⁸ The Indian strategy after that goes on to address the specific circumstances of using the Indian data pool existing in the public sector undertakings for the development of AI systems.⁴⁹ Therefore, the Chinese strategy focuses on the security of networks and AI systems, i.e., physical structures, whereas the Indian strategy resembles the Western approach to data security. The argument is not that the Chinese strategy is not cognizant of the need for data security, but that data security is not a core focus area or theme in the Chinese strategy. This omission's rational explanation could most probably be attributed to the government's exceptional control over data collected by Chinese firms, including private entities. For example, the Chinese cybersecurity law of 2017 made it easier for government officials and agencies to request and access private-sector data.⁵⁰ Thus China circumvents the data security question in its strategy due to the government monopoly over private data. In contrast, in the case of India, with relatively inferior data annotation mechanisms, data security holds a central position in its strategy.

The foundational variance is the different ways in which democracies and authoritarian regimes approach individual liberties. The Global Freedom Status for 2021, a metric developed

⁴⁷ State Council of China, “New Generation AI Development Plan,” 22.

⁴⁸ NITI Ayog, “National Strategy for Artificial Intelligence,” 79

⁴⁹ NITI Ayog, “National Strategy for Artificial Intelligence,” 79-84.

⁵⁰ Jessica Dawson and Tarah Wheeler, “How to tackle Data Collection behind Chinese Ambitions,” *Tech Stream*, Brookings Institution, April 29, 2022, <https://www.brookings.edu/techstream/how-to-tackle-the-data-collection-behind-chinas-ai-ambitions/>.

by Freedom House, accorded India a score of 67 out of 100 while giving China a score of 9 based on the same evaluation methods.⁵¹ This metric assesses political rights and civil liberties in a given geographical area, irrespective of their influence from state, non-state or global actors. These assessments are based on the understanding that the Universal Declaration of Human rights adopted by the UN General Assembly in 1948 applies to all humanity and the assumption that freedom for all people is best achieved in liberal democratic societies.⁵² This disparity in approach to civil liberties manifests in the respective AI strategies as well. Therefore, even if the same technology is made available to both these countries, they will undertake the management of privacy and data security enabled by that technology differently. In case of disruptive technologies like AI, with a capability to create a paradigm shift in all facets of human interactions, such variances will result in two different approaches to technology assimilation and implementation. Further, a democracy would categorize individual private data as an inalienable right of the citizen. In contrast, an authoritarian regime would observe private data as a source of control which, if controlled by the citizen, could threaten state authority. Therefore, while privacy is the citizen's right in a democratic state, it is the state's prerogative in an authoritarian regime.

Recognition of Environment and Ecosystem

The AI strategies of both India and China do not explicitly provide any approach for conserving the environment or ecosystem while implementing AI. This is one of the areas where

⁵¹ Freedom House, "Freedom in the World 2021," *India*, <https://freedomhouse.org/country/india/freedom-world/2021>, *China*, <https://freedomhouse.org/country/china/freedom-world/2021>.

⁵² Freedom House, "Methodology," *Introduction*, <https://freedomhouse.org/reports/freedom-world/freedom-world-research-methodology>

both strategies achieve broad convergence. The UNESCO recommends that all AI systems comply with regulations and practices designed for environmental and ecosystem protection and restoration and sustainable development.⁵³ The aim is to reduce the adverse environmental impact of AI systems through a smaller carbon footprint and reduced environmental risk factors. Both Chinese and Indian AI strategies do not directly address this core value. While the Indian strategy acknowledges the potential of AI in providing smart transportation that could provide environmentally sustainable solutions, the Chinese strategy does not consider the environmental impacts of development in the keystone document.⁵⁴ Trisha Ray, an Indian researcher in emerging technologies, says that the root cause for this approach is the issue of inequitable access to AI resources when developing economies strive to achieve AI parity compared to their Western counterparts.⁵⁵ Thus, the AI strategies of India and China, being in their developmental stages, try to focus less on the environmental challenges that AI systems could create and more on the means of implementing AI.

Inclusiveness

Inclusivity of the diverse human types in society would directly affect the inherent bias of AI algorithms. The UNESCO recommendations advocate inclusivity of diverse human beings and participation based on individual freedom of choice in every aspect of the AI lifecycle.⁵⁶ The

⁵³ UNESCO, “Recommendations for Ethics of AI,” 6.

⁵⁴ NITI Ayog, “National Strategy for Artificial Intelligence,” 41.

⁵⁵ Trisha Ray, “Artificial intelligence technologies have a climate cost,” *The New Indian Express*, February 3, 2022, <https://indianexpress.com/article/opinion/columns/artificial-intelligence-technologies-have-climate-cost-7753829/>

⁵⁶ UNESCO, “Recommendations for Ethics of AI,” 6-7

Chinese strategy does not mention inclusiveness and diversity. In comparison, inclusive growth is the key theme in the Indian strategy. The broad argument is that Chinese society is more homogenous than Indian society. However, there are limited avenues for absolute homogeneity in any nation-state in an interconnected world. Further, the small percentage of minorities in China adds up to a significant number of people due to the large population. For example, the Uyghur population in China, which is less than one percent of the total Chinese population, still accounts for 12.4 million people.⁵⁷ A strategy that prescribes an approach to exclude more than a million people from its scope is fundamentally biased. Any technology developed based on such a skewed strategy will provide a biased performance. Thus, the Chinese strategy does not compare well with the UNESCO recommendations for inclusivity.

Interconnected Societies

Both strategies fare differently in their approach to international cooperation in AI. The UNESCO recommendations also advocate international cooperation in AI to avoid excluding less developed countries from the capabilities of AI technology. The Chinese strategy envisages international cooperation to achieve governance and cope with global problems in AI.⁵⁸ The Chinese outlook on international cooperation in AI is that of another avenue for international science and technology competition.⁵⁹ The Indian strategy envisages India taking the lead in setting up a global center for AI, like the Paris Artificial Intelligence Research Institute, where the government takes the lead in creating the institution in active collaboration with industry and

⁵⁷ Thomas Lum and Michael A. Weber, "China Primer: Uyghurs," *In Focus*, IF 10281, Washington, DC: Congressional Research Service, <https://crsreports.congress.gov/product/pdf/IF/IF10281>.

⁵⁸ State Council of China, "New Generation AI Development Plan," 61.

⁵⁹ State Council of China, "New Generation AI Development Plan," 2.

academia.⁶⁰ The aim is to achieve inclusive AI for the world by the Government of India taking the lead in bringing together all global stakeholders to create People's AI.⁶¹ Thus, while the Chinese approach to AI is to leverage its capabilities for relative superiority, the Indian approach envisages the concept of AI for all. The Chinese strategy aims to collaborate to set up rules and regulations. In contrast, the Indian strategy approaches collaboration among stakeholders crossing international boundaries to address AI problems collectively, leveraging the strength of each stakeholder. Thus, the Indian approach to AI development is more inclusive and collaborative.

Key themes from the comparison above indicate certain foundational divergences between the strategies for AI in China and India. Both countries approach the ethical aspects of AI differently. These divergences arise from the focus of areas of respective strategies, cultural backgrounds, government systems, and geopolitical situations. These foundational aspects, in turn, leads to each country adopting divergent ethical standards. The realizations of the potential AI capacities by these two countries would create global impacts due to the scale. Therefore, there is a need to align better the ethical aspects of AI development among these key actors. This would require a clear understanding of the root causes of the divergent approach to ethics.

⁶⁰ NITI Ayog, "National Strategy for Artificial Intelligence," 58.

⁶¹ NITI Ayog, "National Strategy for Artificial Intelligence," 62.

COMPARISON OF FOCUS AREAS FOR AI DEVELOPMENT

Indian AI Strategy

The Indian AI strategy envisages an aspirational approach for inclusive societal impact through the concept of 'AI for All.' Essentially it envisages the application of AI in five benign sectors: Healthcare, Agriculture, Education, Smart-cities, and Smart-mobility. The Indian strategy thus explores means for leveraging this transformative technology to ensure social and economic growth in line with the government's development philosophy.⁶² The '#AIforAll' strategy seeks to enhance and empower human capabilities to address the challenges of access, affordability, shortage, and inconsistency of skilled expertise.⁶³ The strategy also aims to effectively implement AI initiatives to develop scalable solutions for all emerging economies and not only that of India. The strategy envisions tackling some of the global challenges from AI's perspective in applying, researching, and developing responsible AI.⁶⁴ It acknowledges that India is a late mover in this technology and aims to leverage this attribute to its advantage by adapting the technology for India's unique needs using innovative approaches. The Indian strategy thus envisions India learning from the experience of other actors who have pioneered the field so that it could skill the available human capital to become the AI garage of the world. The document proposes a two-tier strategy of creating centers for research excellence and international centers for transformational AI, which would then act as nurseries for AI technologies.⁶⁵

⁶² NITI Ayog, "National Strategy for Artificial Intelligence," 5.

⁶³ NITI Ayog, "National Strategy for Artificial Intelligence," 5

⁶⁴ NITI Ayog, "National Strategy for Artificial Intelligence," 5.

⁶⁵ NITI Ayog, "National Strategy for Artificial Intelligence," 7.

Five key themes emerge from an overview of the Indian AI strategy document. First, the strategy aims at leveraging the capabilities of AI to achieve inclusive growth. It aims to benefit all sections of society and, more broadly, the larger humanity. Second, the focus areas of the strategy are benign fields of societal development. It does not envisage devoting efforts toward using AI for military or security purposes.⁶⁶ Also, it aims at sectors that need governmental intervention to achieve transformative socio-economic change using AI. Third, the approach to AI in the Indian strategy is collaborative. The Indian strategy aims at developing solutions for all, especially emerging economies. It proposes that considering the complexities of Indian society, the technology developed to achieve transformation in India will also be scalable for other developing and emerging economies. Thus, the Indian strategy aims at leveraging India's strength - its skilled human capital - using innovation and adaptation to overcome the handicaps in homegrown pioneer AI solutions. Thus, it aims to achieve a collaborative effort so that India can provide the services of an AI garage for the world. Fourthly, the strategy places specific emphasis on the ethical aspects of AI and envisages developing 'responsible AI.' The strategy identifies ethical challenges that AI will create, including privacy and bias. Further, it identifies structures and approaches to ensure that the development of AI aligns with ethical standards. Finally, it advocates the role of the government in realizing the strategy as an enabler and a catalyst. The strategy aims to use a 'marketplace model' to realize the AI potential of the country. In this model, the market decides the pricing and the approaches needed to achieve optimal results. Thus, while the strategy aims at using private entities, it identifies the need for the

⁶⁶ It is not implied that India does not have any plan to use AI for security purposes. The seminal strategy document does not consider the AI for security and military application as a focus area. Pranav Mukul, "Task Force Set Up to Study AI Application in Military, *The New Indian Express*, February 3, 2018, <https://indianexpress.com/article/technology/tech-news-technology/task-force-set-up-to-study-ai-application-in-military-5049568/>

government to take the lead in the initiation of the projects and creation of demand. The strategy visualizes the government's role as more than a regulator or an enforcer but an enabler and a participant in technology development.

Chinese Strategy for AI

The Chinese approach to AI is more assertive. The strategy document acknowledges the potential of AI to provide a significant advantage to China in the global military and economic competition.⁶⁷ While the document, on the one hand, asserts the need to avoid AI competition among countries, it pursues an aggressive drive to use military applications of AI on the other.⁶⁸ The Chinese strategy identifies six focus tasks for its strategy, each further divided into multiple subtasks. The six focus tasks are a) building open and coordinated AI science and technology innovation systems, b) fostering a high-end, highly efficient smart economy, c) constructing a safe and convenient intelligent society, d) strengthening military-civilian integration in the AI domain, e) building a safe and efficient intelligent infrastructure system, and f) planning for new generation AI major science and technology projects.⁶⁹ The Chinese guiding philosophy is to integrate AI with the economy, society, and national defense as the primary line of effort.⁷⁰ The basic principle that guides the Chinese strategy is that AI development should be a technology-led initiative that addresses various aspects of AI integration into society from a systems perspective.⁷¹ The strategy also prescribes that AI development should be market-controlled and

⁶⁷ Allen, "Understanding China's AI Strategy," 4.

⁶⁸ Allen, "Understanding China's AI Strategy," 4-5.

⁶⁹ State Council of China, "New Generation AI Development Plan," 8-22.

⁷⁰ State Council of China, "New Generation AI Development Plan," 4.

⁷¹ NITI Ayog, "National Strategy for Artificial Intelligence," 5.

advocates the concept of open-source AI.⁷² The Chinese AI strategy envisages it as a transformative technology that could leapfrog China in the global competition.

An overview of the Chinese strategy document reveals certain key aspects of the approach. First, China views AI as another arena of competition. Also, the Chinese strategy aims at collaborating with others in this field. However, the Chinese strategy simultaneously professes the need to avoid global competition in AI and views AI as a field where China could significantly gain global competition. This duality of approach is evident in other aspects of international cooperation that China pursues. For instance, China supports a ban on the use of Lethal Autonomous Weapons but does not support a ban on their development.⁷³ A similar duality in approach exists in the Chinese approach towards the weaponization of space. China advocates against placing weapons in space but continues developing ASAT weapons and technologies to interfere with space assets in orbit.⁷⁴ Secondly, the Chinese strategy does not indulge in an inclusive approach. China has demonstrated the use of AI-based domestic surveillance for the persecution of minorities in Xinjiang province.⁷⁵ Chinese think tanks and AI surveillance companies are exploiting their ‘used cases’ in Xinjiang to advocate for a global ‘Panopticon’ where crime will cease to exist due to the use of AI.⁷⁶ The third aspect of the

⁷² NITI Ayog, “National Strategy for Artificial Intelligence,” 5.

⁷³ Kelley M. Sayler, 2021. *International Discussions Concerning Lethal Autonomous Weapon Systems*. In Focus IF 11294. Washington, DC: Congressional Research Service, <https://sgp.fas.org/crs/weapons/IF11294.pdf>.

⁷⁴ Jeff Foust, “U.S. Dismisses Space Weapons Treaty Proposal as Fundamentally Flawed,” *Space News*, September 11, 2014, <https://spacenews.com/41842us-dismisses-space-weapons-treaty-proposal-as-fundamentally-flawed/>; Xinhua, “China Completes Test With Space Station's Robotic Arm,” January 06, 2022. <https://www.chinadailyhk.com/article/254871>

⁷⁵ Allen, “Understanding China’s AI Strategy,” 6.

⁷⁶ Allen, “Understanding China’s AI Strategy,” 7. A ‘used case’ outlines, from a user's point of view, a system's behavior as it responds to a request. In software development, used cases define user inputs accurately to aid the developer in providing the most suitable solution. The Chinese use of AI for societal control in Xinjiang provides definite inputs to the AI technology development companies to improve the algorithm through

Chinese AI strategy is the clear time-bound goals set by the strategy document, which aims that by 2030 China will be the world's primary AI innovation center.⁷⁷ It provides a clear time-bound road map, addresses the resource allocation methodology, and prescribes an organizational structure to achieve these milestones. Fourthly, like other fields of science and technology, the AI strategy also envisages close cooperation between military and civilian fields. China has demonstrated the use of an established system for the dual use of niche technologies. For example, Sense Time, a leading AI-based surveillance company that offers products worldwide, is the contractor for the surveillance system used in Xinjiang for minority persecution. Similarly, DJI, which enjoys a monopoly over the commercial drones market in the world, including services to various global security forces, is believed to be state-funded, creating aspersions on Chinese intentions.⁷⁸ A similar approach resonates in the Chinese strategy where it envisages strengthening civil-military integration and military-civilian two-way transformation in this domain as a focus task.⁷⁹ This military-civilian fusion creates avenues for additional ethical challenges like privacy and individual freedom.

One of the key resources in AI development is data. In the Chinese model, security forces could use the data collected by civilian and private entities. Considering the global customer base of Chinese companies, such dual use of data could create security challenges for other countries that use these products. Due to the established Military Civil Fusion in the field of technology

incorporating lessons learned. Thus these companies will be able to develop a more effective system for AI based surveillance with global applicability.

⁷⁷ State Council of China. "Next-Generation Artificial Intelligence Development Plan," 6.

⁷⁸ Cate Cadell, "Drone Company DJI Obscured Ties to Chinese State Funding, Documents Show," *The Washington Post*, February 01, 2022, <https://www.washingtonpost.com/national-security/2022/02/01/china-funding-drones-dji-us-regulators/>

⁷⁹ State Council of China. "Next-Generation Artificial Intelligence Development Plan," 21.

development in China, these data sets would therefore be accessible to security and military establishments.⁸⁰ Internally, this could breach the privacy and individual liberties of people staying in China. Externally, it could compromise the security architecture of countries from which the data was collected. This external data collection could provide China with asymmetric advantages in manipulating the behavior of other countries in peacetime and conflict. Thus, the Chinese strategy with its flaccid approach to data protection could create ethical and security challenges. The Indian approach to data collection and utilization is better aligned to the global norms and UNESCO recommendations with necessary institutional and voluntary safeguards.

Comparison of Focus Areas

Comparing the two seminal documents for AI development strategy in India and China indicates the following aspects. Firstly, while India pursues AI solely for socio-economic development and inclusive growth through a predominantly benign approach, China envisions AI as the leapfrogging technology that could provide an asymmetric advantage in global competition with the US. Secondly, while the Indian document envisions civilian applications for AI, the Chinese document envisages the development of AI applications through an integrated civil-military approach. Thus, it also resonates with the established military-civil fusion concept in developing AI technologies. This approach creates additional challenges in ensuring individual privacy and security of data. Thirdly, both countries aim to achieve global leadership in AI. Despite the common aim, the Indian strategy is more subjective in annotating this

⁸⁰ The US state department paper defines Military-Civil Fusion as an aggressive, national strategy of the Chinese Communist Party. The strategy aims at the elimination of barriers between China's civilian research and commercial sectors, and its military and defense industrial sectors. The CCP is implementing this strategy, through its own research and development efforts, as well as 'acquiring and diverting' the world's cutting-edge technologies to achieve military dominance. <https://www.state.gov/wp-content/uploads/2020/05/What-is-MCF-One-Pager.pdf>

roadmap, while the Chinese strategy addresses the end-ways-means-risk attributes more objectively alongside a time-bound roadmap. Finally, both strategy documents acknowledge the need for calibrating the AI development to address ethical issues. The Indian strategy addresses the ethical challenges of biases, privacy, and data security. In contrast, the Chinese document does not clarify the specific ethical challenges that could emerge in the processes. Further, the Indian strategy examines ways to mitigate these challenges and specifies distinct institutional structures. The Chinese strategy annotates this aspect under the broad scope of auditing and guarantee mechanisms.

CULTURAL FOUNDATIONS OF ETHICS

The moral standards of a community will reflect upon the ethical framework it adopts in all avenues of interaction. Hinman defines ethics as the conscious reflection on one's moral beliefs to improve, extend, or refine those beliefs.⁸¹ It, therefore, follows that the ethical standards adopted by each society or community would depend on the evolution of societal morality. These moral bases emerge from historical and cultural backgrounds tempered by society's current situation and challenges. This argument is a specific case of Winner's assertion that the various issues of concern in ethical challenges in technological dynamism may have a common origin deep in the history of human culture.⁸² While Winner's argument is about the influx of technology in human civilization, the argument could be extrapolated to look at specific

⁸¹ Lawrence M Hinman, "The Moral Point of View," *Ethics; A Pluralistic Approach to Moral Theory*, ed. Joann Kozyrev and Jiasuke Yasutake (Boston, MA: Wadsworth Cengage Learning), 2013, 5.

⁸² Langdon Winner, "The Flaw and its Origins," *Autonomous Technology Technics Out of Control as a Theme in Political Thought* (Boston; MA, MIT Press), 1997, 107.

sections of human civilization, such as a specific culture, community, or nation-state. Therefore, the approach and consequent ethical standards a modern nation-state adopts will reflect its cultural heritage and evolution of moral standards.

Indian Ethical Foundations

The Indian ethical construct essentially evolved out of Hinduism and was subsequently tempered by the influx of multiple foreign influences. Religion and ethics are intertwined in the evolution of Indian ethical thought. Consequently, the Hindu religious texts (like Vedas and Upanishads) and epics (Ramayana and Mahabharata) articulate the foundation of Indian ethics. Without delving deeply into the religious ideologies, three distinct attributes could describe the broader Indian ethical concepts. First, Hinduism envisions four goals that human beings strive to achieve. These end states - called *Purusharthas* - are *Dharma* (duty, righteousness), *Artha* (worldly gain), *Kāma* (fulfillment of desire), and *Mokṣa* (liberation, unification with the Supreme One). Out of these four, *Dharma* and *Moksa* drive the ethical behavior of human beings and are considered to be of relatively higher importance than the other two. While *Dharma* implies the performance of one's duty, *Moksa* requires one to be most virtuous so that he is released from the cycle of rebirth and achieves unity with the Supreme One. Secondly, the Indian global outlook evolves from the concept of *vasudhaiva kutumbakam* – the world is one family.⁸³ This liberalistic outlook, which germinated more than 2500 years ago, has been central to the Indian worldview. Thirdly, the Indian worldview is cosmopolitan. India's location at the intersection of major caravan and maritime routes of the past, coupled with invasions by multiple external rulers

⁸³ Only small men discriminate, saying One is a relative; the other is a stranger. For those who live magnanimously, the entire world constitutes but a family. Chapter 6 of Maha Upanishad VI. 71-73. Maha Upanishad, translated by Dr. A. G. Krishna Warriar, Published by The Theosophical Publishing House, Chennai

from the Mughals to the British, provides an accommodative, cosmopolitan outlook comfortable with dealing with diverse cultures.⁸⁴ Thus, the Indian ethical foundations and associated worldview are driven by the overarching pursuit of virtue, righteousness, and duty (*Dharma* and *Moksa*) with a view of all humanity - not Indians alone - as one's family. In observing this world as one, the Indian outlook is thus more benevolent in accommodating diverse ideas, concepts and beliefs. The most peculiar facet of the Indian ethical foundations is that despite diverse influences through the ages, it preserves its core character that emerges from the concepts explained above.

Chinese Ethical Foundations

In contrast, the Chinese worldview is inherently hierarchical, rooted in its preeminence in the neighborhood.⁸⁵ As a self-contained and self-sufficient economy throughout most of its history, foreign trade and consequent interactions with external cultures were minimal in the case of China.⁸⁶ Despite its trade ties with other civilizations, the Chinese civilization remained isolated with the inward-looking concept and an extremely self-centered and self-confident sentiment.⁸⁷ Therefore, when the Chinese Communist Party envisages rejuvenation of the erstwhile glory of Chinese culture, this concept of being superior to others is pursued. The Chinese ethical foundations would evolve out of this inward-looking cultural foundation. The

⁸⁴ Shyam Saran, "Sources of India's World View," *How India Sees the World - Kautilya to 21st century*, (India; Juggernaut Books) 2017, ISBN 9789386228406, 27.

⁸⁵ Saran, "Understanding China," 101.

⁸⁶ Saran, "Understanding China," 101.

⁸⁷ Stan Florek, "Middle Kingdom," *Australian Museum*, September 3, 2020, <https://australian.museum/learn/cultures/international-collection/chinese/middle-kingdom/>.

second foundational element of Chinese ethical concepts is that of Daoism and Confucianism. Both Daoism and Confucianism could be generalized, for the present discussions, as a version of the Western virtue ethics that focuses on the manifestation of the good in oneself. These ancient Chinese concepts of virtue get modified by the third aspect of Chinese ethical evolutions - the influx of Maoist ideology. Under the Maoist ideology, something is good or bad depending on the class interest.⁸⁸ Some would even argue that the disruption of the Maoist period followed by the opening up has created a moral vacuum in China.⁸⁹ The Maoist ideology implies that anything good for the working class is ethical. The Maoist ideology also has the concept of people's struggle as its key attribute. Thus, the Chinese ethical foundation that evolved over millennia was founded on a self-centered conceptualization in pursuit of inherent virtues that Maoist ideologies of class interest have modified significantly. The inward-looking moral view places class interests over individual virtues.

Comparison of the Two Foundations

Comparing the two cultural foundations and the consequent conceptualization of ethics in the two countries would indicate the following key aspects. First, the Indian ethical concept weighs on virtue and duty, similar to Western ethical thoughts. The Chinese ethical foundations, in contrast, are weighed down by virtue and class interests. It could also be argued that in situations where Confucian and Maoist ethics come under confrontation, Maoist ethics of class interest would prevail. Secondly, the Indian worldview has a more cosmopolitan, accommodative outlook, whereas the Chinese worldview is more self-centered and intrinsic.

⁸⁸ Scott Harrison, "Introduction," *The Marxist-Leninist-Maoist Class Interest Theory of Ethics*, 19 accessed at <https://www.massline.org/Philosophy/ScottH/MLM-Ethics-Ch1-2.pdf>

⁸⁹ Roberts, "The Chinese Approach to Artificial Intelligence," 72

These differences will manifest in every avenue of cultural interaction. They would also manifest in ethical standards that they develop for these interactions. Thus, these divergences in ethical foundations manifest in the respective ethical standards both the countries develop in their AI strategies. For example, the Indian strategy addresses the issue of privacy and data security because of the foundations that dictate virtue and duty to other human beings. In contrast, the Chinese ethical thought, which observes every interaction as a struggle, does not stress individual liberties. The core issue for ethical development in the Chinese strategy is security and societal good. Individual freedom and privacy are less important than the larger societal or class benefits in the Chinese approach to ethics. Similar variances could be observed in how both strategies approach data security. Finally, the most significant variances are how both strategies address biases. This approach could be attributed to the idealistic Chinese belief that biases are nonexistent in a society driven by class interests. The Indian strategy, in contrast, is more realistic as it caters to possible biases that would exist in society. As there are large divergences between these ethical standards, interactions in AI would create friction between these two countries.

GEOPOLITICS AND GOVERNMENTAL SYSTEMS

The recent border transgressions by China have resulted in the deterioration of India-China relations. Further, the Chinese overdrive to gain inroads into the Indian Ocean Region in the immediate neighborhood of India has accentuated the Indian security concerns. Secondly, India and China are the most populous countries globally, with India slated to overtake China by

2026.⁹⁰ Capitalizing on niche technology is the only means available to both countries to sustain and develop these huge populations. Thus, both countries would be in an inadvertent competition for global leadership for any leapfrogging technology like AI. Thirdly, the authoritarian regime in China directs a more controlled and focused environment for technology development. In comparison, India, a democracy with a hugely diverse population, will have a long gestation period for developing and implementing policy initiatives. These disparities would accentuate when contrasted with China's relative superiority in AI development.⁹¹ Finally, the Chinese economy is approximately six times that of Indian economy in GDP terms.⁹² This huge economic disparity between China and India would enable China to leverage its economic power towards faster development in AI technologies. This would create disparities between the AI development and implementation rate in these countries. Assuming the present globalized economic architecture of the world, this would imply that Chinese AI products will have a larger market share and greater customer penetration globally.

The two countries' different governmental systems also play into the dichotomies of ethical standards between them. The Chinese governmental system with one-party rule based on Maoist communism approaches every aspect of human interaction as a struggle of the people. Creating this concept of struggle is important for the relevance of the party. Thus, every aspect of Chinese interaction with larger human civilization will be some form of a struggle to gain what

⁹⁰ John Feng, "When Will India Overtake China in Population," *Newsweek*, May 21, 2021. <https://www.newsweek.com/when-will-india-overtake-china-population-1590451>

⁹¹ Amit Kumar, "National AI Policy/Strategy of India and China: A Comparative Analysis," Discussion paper #265, RIS Discussion Paper Series, (June 2021), 29, <https://www.ris.org.in/sites/default/files/Publication/DP-265-Amit-Kumar.pdf>.

⁹² The World Bank, GDP (Current US \$) – China and India, World bank National Account Data, accessed on May 26, 2022 at <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=CN-IN>

the Chinese believe has been rightfully theirs. This approach manifests in the field of AI strategy as well. Therefore, AI development is another avenue for struggle or competition with other human beings, communities, and nation-states for the Chinese. Further, the concept of ‘minimum moral standard’ that the Chinese government establishes aims to regulate citizens' behavior according to moral standards using AI.⁹³ The government becomes the guarantor for ensuring these minimum moral standards through all-pervasive surveillance. This approach manifests in the Chinese social credit system, which provides the government the ability to breach its citizens' privacy with impunity. Thus, the Chinese model envisions data security and individual privacy through explicit trust in the government.

From an Indian perspective, the development of human endeavor in any field of knowledge is a struggle against the circumstances and limitations of human enterprise. This approach would require cooperation for development for the benefit of all. The same concept that enabled ancient Indian development in arithmetic, astronomy, and medicine developed over the ages and was shared across continents through trade routes.⁹⁴ The democratic governmental system that India adopted post-independence fosters a similar approach to interactions in the modern age. Further, the Indian approach requires every actor, including the government, to explain the approach to any facet of societal interaction, including privacy and data security. Thus, in the Indian system, ensuring security and privacy is not by an authoritarian approach but by making the process explainable. Hence, the Indian strategy pursues explainable AI as a core focus area. This system of checks and balances resonates better with the Western approach to ethics in AI. Also, the relatively nascent stage of Indian AI development makes it imperative for

⁹³ Roberts, “The Chinese Approach to Artificial Intelligence,” 66.

⁹⁴ Saran, “How India Sees the World,” 26.

India to adopt a collaborative approach where it leverages its strength and cooperates to make good its weakness. This situation necessitates that Indian standard of ethics are in better alignment with larger humanity compared to China. The Indian approach to privacy and data protection is based on informed consent, technology agnosticism, data controller accountability, data minimization, holistic application, deterrent penalties, and structured enforcement.⁹⁵ This approach also envisages aligning with international standards and creating sectoral frameworks for specific AI technologies when needed. Such granularity and specificity are absent in the Chinese approach to ethical issues in general and privacy in particular. Thus, the Indian approach, while envisioning a certain level of governmental regulations, also envisages alignment with international standards on the issue.

CONCLUSION

If the foundational conceptualization of niche technologies is not undertaken deliberately with the necessary impetus on moral standards, it builds opportunities for malice into the structure. Robert McGinn brings out the idea that technological maximality is not an undesirable feature.⁹⁶ He explains that Technological maximality is achieved when a particular technology makes material artifacts socio-technical systems at a hitherto unequalled or unsurpassed scale or performance.⁹⁷ AI is one such transformative technology that could bring about technological maximality in society. Because of its vast impact potential, development, deployment, and

⁹⁵ NITI Ayog, “National Strategy for Artificial Intelligence,” 87.

⁹⁶ Robert E McGinn, “Technology, Demography, and Anachronism of Traditional Rights,” *Readings in the Philosophy of Technology*, ed David M Kaplan, (Rowman & Little Field Publishers; Lanham, Maryland) 2009, 186-189.

⁹⁷ McGinn, “Technology, Demography, and Anachronism,” 186.

utilization of AI need to be calibrated and deliberate. If such disruptive technology is inculcated without adequate attention to ethical standards, it could damage the moral fabric of society. The absence of creating structures that ensure ethical standards in AI could create problems for humankind in the future. India and China are the most populous countries globally, and together they account for a significant fraction of human beings. If the majority of the human population is pursuing AI with shaky ethical standards, the future of AI is grim. Therefore, these potential AI powerhouses must adhere to minimum ethical standards for AI.

The global standards for AI should cater to all actors' special circumstances and specific challenges. At the same time, the standards cannot be so flexible and accommodative that avenues for ethical failures are built into the structure itself. An example is internet technology. Many would believe that at the conception of the worldwide web was never thought to be used for malicious purposes. Therefore, the web, or the internet as we call it, was built on fragile security standards banking on the 'good' behavior of the users for its security. However, over time, malicious use of the internet has caused billions of dollars to be expended on preventing, managing, and responding to threats and harmful activities. The disruptive potential of AI accentuates the problem, with possibilities of threatening the preservation of life and civilization as it exists today. Kranzberg's first law stated that technology is neither good nor bad nor neutral.⁹⁸ He explains the statement wherein he says that the same technology can have different results in different contexts and under different circumstances.⁹⁹ There is no modern technology that this law that is more applicable than AI. Because AI tends to take up part of human

⁹⁸ Melvin Kranzberg, "Technology, and History: "Kranzberg's Laws," *Technology and Culture*, Johns Hopkins University Press and the Society for the History of Technology, Vol. 27, No. 3 (July 1986), 545, <https://www.jstor.org/stable/3105385>.

⁹⁹ Kranzberg, "Kranzberg's Laws," 545.

cognition into its charter, its effects would be highly contextual. The subjective nature of AI makes it necessary for stakeholders to set conditions for the amalgamation of this technology for the greater good of society. Therefore, strategies for AI must meet certain basic moral standards across the AI life cycle. In an interconnected world, AI has the potential to transform societal behavior globally. If such technology is based on fragile moral standards, it could lead to ethical failures.

There are foundational approaches to AI as enunciated in the respective seminal AI strategy documents – the Chinese AIDP and Indian NITI Ayog Policy paper on AI provides an opportunity to compare and contrast the two strategies. India and China have the potential to become key actors in the field of AI. Therefore, the strategy adopted by these two countries in developing AI will impact the larger global AI environment. The Chinese approach AI as another field for competition. In contrast, the Indian approach to AI is a field for socio-economic development and inclusive growth. This approach gives the Indian strategy a more accommodative, benign outlook, thereby creating greater avenues for international cooperation with India rather than China. Secondly, comparing UNESCO recommendations for ethical AI would indicate certain commonalities and differences. Both countries believe that they have the potential to become global AI powerhouses. Both strategies provide a mechanism to ensure data security as a key requirement in AI development. Both strategies aim to ensure the development of AI for greater societal benefit. Nevertheless, the concept of society is different in both approaches. While the Chinese definition of society is more restrictive to cover the Chinese society only, the Indian view is much broader and cosmopolitan. The Chinese model envisions the use of regulatory mechanisms and audits to ensure the security of the network and the AI models. But, it does not specifically address the AI lifecycle's core ethical challenges like biases,

individual privacy, and transparency. Further, the data security mechanisms prescribed in the Chinese model do have certain elements of duality, as observed in other Chinese approaches to niche technology. In contrast, the Indian AI strategy identifies the possible ethical challenges in AI and examines approaches to mitigate them from the initial stages. Thus, it addresses privacy needs by proposing a model using differential AI and advocates the need for explainable AI to mitigate the possibility of biases and improve transparency. Further, the core theme of the Indian strategy is AI for all, which aims to achieve inclusive growth for all, including other partner societies and nations. Thirdly, while the Chinese AI strategy has military and security applications as a key focus area, the Indian strategy aims for AI implementation in social development like healthcare, transportation, community development, and agriculture.

The differences in the ethical approaches to AI between China and India are rooted in their culture and present geopolitics. The traditional Chinese culture based on Confucian virtue ethics was tempered by the Maoist revolution and the all-pervasive influence of the Chinese Communist Party. Under this business scheme, the individual's rights are less important than that of the class of society. If an attribute is good for society, it is ethical despite transgressions in individual rights, freedom, privacy, or equality. Every aspect of human interaction is a struggle; AI is a leapfrogging technology that could enable the Chinese to struggle to achieve global leadership in the competition with the West. In contrast, the Indian culture is based on the Hindu moral standards of virtue and duty tempered by influences from various civilizations over centuries. Thus, the Indian outlook is that of the world as one large society. This cosmopolitan, inclusive outlook is more accommodative of external influences and resonates better with the UNESCO recommendation for ethical AI. This approach creates avenues for greater international cooperation with India in any aspect of interaction. Geopolitically, China is in peer

competition with the US and Western civilization to regain its status as the middle kingdom. Also, an authoritarian system needs to maintain the regime's supremacy. The Chinese have achieved significant advances in science and technology and hold important data necessary for independent AI development. On the other hand, India is more focused on internal development and sustenance, including capitalizing on skilling its human capital to achieve overall growth. Being a late mover in AI, it needs to mitigate several technological shortfalls to become the AI garage of the world. Further, it needs to ensure that the Chinese use of AI does not become a security threat. Therefore, geopolitics necessitate India adopting a more collaborative approach with like-minded nations to AI development.

The dynamics in the India-China interactions in other fields would also resonate in AI development. This situation would put two foundationally different approaches to ethics in AI to interact with each other. Due to the variances in the standards, such interactions are likely to cause friction. Such friction between two potential AI powerhouses, which are both nuclear-weapon states, is not beneficial for the larger humanity. Avoiding such a situation would need global initiatives to ensure robust ethical standards. The UNESCO recommendations are a start in the right direction. UNESCO should progress this initiative to attempt a global treaty on ethical standards for AI. There may be arguments to oppose this initiative quoting the futility of other similar global treaties, which some actors are transgressing. The counter to such an argument is that the absence of any binding global standard would create a worse situation. Historically, ethical standards have always lagged behind technological evolution. This lag has caused avoidable human suffering and systemic ethical failures. The speed of development in AI is comparatively higher than in other technology fields. Therefore, ethical standards for the same should develop at a faster pace. The need of the hour is to develop a robust global binding

agreement on basic standards of AI. Punitive measures against non-compliance and incentives for better compliance standards should be built into such an agreement. It is only through a collective global approach that individual freedoms and ethical standards in AI can be preserved.

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