**HSI2005: Interdisciplinary Learning Assignment (Part 2)**

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**Section A. Structured Questions (no more than 400 words each question)**

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| **Question 4 [include photos of you and the exhibit from each museum]**    Fig 1. LKCNH Museum Fig. 2 NUS Art Museum  a)  From LKCNH Museum in fig. 1, the exhibit highlights the evolution of humans, based on the anatomical changes in the human skeleton, reflecting adaptations to bipedalism, tool use, and brain expansion. The changes in bone structure, such as the skull shape, pelvis structure, and limb proportions, shows how humans evolved in response to the changes in the food they eat and changes in climate. The differences also highlight how natural selection shaped humans over time. Aside from the differences, the exhibit highlights key skeletal differences, reflecting adaptations to bipedalism, tool use, and brain expansion.  From NUS Art Museum in fig. 2, the exhibit highlights the revolution of food storage and cooking with the invention of pottery, allowing for long-term settlement for villages as it reduced the reliance on immediate foraging. The designs on the pottery also sparked artistic expression, likely holding communal significance at the time, it shows how art became a tool for communication and cultural identity. Kiln technologies for pottery later on became an innovation, which laid the foundations for advanced technologies that we have now, such as metallurgy and engineering, showing how one invention created a domino effect of technological advancements.  b)  The LKCNH exhibit represented a scientific, deterministic perspective, to show physical continuity and change in human ancestry. It follows a process of observation, comparison, and evidence-based reasoning to explain the evolution of the human anatomy. The thinking is analytical and objective, supported by genetic variation and environmental changes. The outcome is a universal truth: humans evolved from earlier hominids through biological mechanisms, highlighting that adaptation is a natural process. The values from this exhibit are empirical knowledge (scientific truth), rationality, and universality.  In contrast, NUS Art Museum exhibit reflects a creative perspective, highlighting how humans, through their own innovation, helped shape and transform society. The process involved experimentation, artistic expression, and problem-solving—in response to needs like food storage and communal living. The outcome demonstrated intentional change as pottery didn’t “evolve” naturally, rather it was invented and refined by humans. As such, the outcome is shaped by cultural exchange. The values include creativity, communal and cultural identity, and human collaboration.  References (optional/not included in word count)  **Kiln Technology and Bronze Production:**  Liu, L., & Chen, X. (2012). *The Archaeology of China: From the Late Paleolithic to the Early Bronze Age.* Cambridge University Press. |
| **Question 5**  a)  The law of attraction is pseudoscience because it lacks empirical evidence and relies heavily on an individual’s subjective interpretation. It does not follow any scientific methods for measurements, and it does not have any falsifiable claims, rather it provides vague statements that are impossible to determine how true it is, for example the idea that one attracts something by believing in it. Additionally, the law cloaks itself with scientific terms to make it sound scientific, using words like “energy” to appear credible, but these terms are not scientifically testable nor falsifiable in the context of law of attraction.  b)  I think most people still believe/practice it due to confirmation bias. Many will read success stories online and start to believe that the law is true. When they start to practice it, some may experience success, but it would be through coincidence or through their own efforts, unrelated to the law itself. Additionally, some people would experience a placebo effect, thinking every little change or detail in their life is something that they had caused by “believing” in it, thus causing more people to believe the law is actual science. Emotionally, it is also calming for people in distress, as it offers a temporary sense of hope for them and when they do experience something good, even if it is placebo, they feel empowered and makes them feel in control of their reality, making them feel more comforted.  c)  Personally, I obviously do not believe in it. I feel that as long as it cannot be scientifically proven on paper, it is not true. There are a number of success stories but there are also an equal number of failure stories, moreover failures often aren’t even posted online, so there are actually more failure stories than success. In a twisted psychological way, the small number of success stories posted online provide people with a false sense of hope, making them think that if they do it long enough, something good will happen, when in reality those basic changes in life could have been through their own efforts of consistency. I am against this pseudoscience as I believe that in order to take control of one’s life, one should focus on their own discipline and consistency to better themselves, and that’s when good things start to happen, the law of attraction is just an easy way out many people take. |
| **Question 6**  a)  Bio-enhancement is a field of science and technology that enhances the human body through technological means beyond what is necessary for basic health or survival. This includes robotic limbs, synthetic organs, neural implants, cognitive enhancers, or even gene editing techniques like CRISPR to enhance traits like intelligence, immunity or muscle growth. Bionic limbs have been used to help disabled users to improve their life, and gene editing is used to boost resistance against diseases. In the future, these bionic limbs could be applied to humans with no disabilities and used to enhance their body to superhuman-like. It works by identifying traits in a human that can be enhanced, then applying scientific technology, integrating enhancement into humans in a safe and effective way.  b)  Technology is known to be expensive, hence if such technology is only made available to the wealthy, it could deepen inequality in society. Moreover, such technology can be done in the early stages of birth, in which the individual undergoing the enhancement does not have a choice. Ultimately, going through enhancement blurs the line between humans and natural, as it makes the idea of a “superhuman” possible. Legally, as technology is still developing, the regulations on such enhancements are in the early stages and may not be able to cover for long term risks, it is unclear what kind of negative impacts these enhancements can have on the world, gene editing techniques for example are still new and unclear on what is acceptable and what is not.  c)  I feel it is beneficial if used responsibly and only for the people who actually need it, that is, the disabled, individuals who suffer from diseases. The technology is very powerful, it is unfair that able bodied humans are still given the opportunity to enhance themselves. It should be offered to those who are disabled in order to allow them to live like normal humans, this allows them to feel more “human” rather than letting able bodied individuals to feel more “supernatural”. Additionally, I feel consent should be important as well, as such, undergoing enhancement in the early birth stage should not be allowed. All in all, the opportunity for enhancement should be provided to those who require it, never for those who just want to enhance their life, so as to not promote inequality in our society. |

**Section B.**

In a technologically advanced country like Singapore, Artificial Intelligence (AI) is being integrated into our daily lives. This report explores how undergraduates perceive, understand, and accept AI, both practically and emotionally. Using a survey of 51 students using Likert scales, rankings, and demographic data, we found that while awareness of AI is high, actual usage is low especially for emotional support. Key concerns include data privacy and lack of regulation

Section 3.1 makes a clear contrast between the participants awareness and usage of AI, particularly in emerging fields. While the participants were generally aware of established applications, their usage of newer areas dropped significantly, examples include AI Robots & Physical Interactions (97% gap), Smart Home & Assistants (74% gap), and Shopping & E-commerce (69% gap). This suggests that usage is not always correlated with awareness. Understanding this disparity is crucial to assessing how well AI is being integrated into everyday life. The disparity suggests that comfort comes from familiarity, individuals are more comfortable to use AI that has long been integrated into our lives for a long time compared to new emerging AI, which may be less understood. A study by Michael Horowitz found that while familiarity with AI can increase support for its applications, it can also lead to resistance when individuals feel that AI is encroaching upon tasks that they are accustomed to performing themselves, this usually points to issues related to emotional well-being (Horowitz, 2023).

Significant skepticism about AI’s ability to support emotional needs was highlighted in section 3.2. Only 69% and 67% agreed that mental health tools and devices to meet emotional needs can benefit their emotional well-being. Although AI is widely accepted for its effectiveness in boosting productivity, its potential for providing emotional support is unexplored and met with caution. Despite of AI advancements, AI is still unable to understand or comprehend human emotions. They can simulate empathetic responses but lack emotional awareness. Therefore, participants may deem these interactions with AI as superficial, especially for topics requiring deep emotional understanding, thus lacking the depth and authenticity of human connections which most people seek in times of vulnerability (Kingsmith, 2024). Trust is fundamental in these scenarios, thus sharing private information to AI will cause most people to hesitate. A study by Varghese (Varghese, 2024) found that only 5.2% of participants reported a high level of trust in AI for mental health interventions. They are primarily concerned about data misuse, but many also simply seek authentic human presence during moments of weakness.

Personal privacy and data protection are the top concerns that the participants are worried about, observed in section 3.3 with the lowest mean score of 2.23 in the ranking question. This is because AI frequently gathers large amounts of personal data without disclosing its intended use. A study by Mariarosaria Taddeo and Luciano Floridi supports this idea. It emphasizes that the lack of transparency in AI systems increases user vulnerability (Mariarosaria Taddeo, 2018). This induces a fear of data misuse, especially in the absence of regulations. Additionally, people feel more exposed because the laws and regulations have not kept up with the fast development of AI. A 2023 World Economic Forum report found that more than 60% of people fear that AI is developing faster than government regulations (Forum, 2023).

In section 3.4, it shows that while majority are open to using AI in their daily lives, concerns over privacy, reliability and broader ethical issues cause them to hesitate. To encourage greater acceptance, we can implement new policies, make improvements to AI, or simply educating people more. First is through stronger data protection policies, giving users more transparency and control over what they want to share with AI—similar to the European Union’s General Data Protection Regulation, which has shown to improve public trust (Voigt, 2017). Developers should also focus on making AI explain more so that users can understand how certain decisions are made, especially in areas like emotional support (Finale Doshi-Velez, 2017). Lastly, simply educating users on digital literacy can help users feel more confident and comfortable in using AI as they will be more aware of what AI can or cannot do and how the data that they reveal will be used.

The findings of the study fit into current global knowledge to a large extent, the distinction between awareness and usage, greater trust in practical aspects than emotional, and privacy and regulations concerns, are largely consistent with existing research on AI adoption. Studies by (Moravec, 2024) highlighted that while awareness of AI is widespread, actual engagement is only surface level, especially for emotionally involved technology. Additionally, data privacy and lack of regulation have been flagged as barriers to adoption (Forum, 2023). However, since this study was conducted among undergraduates of 51 participants only, generalizability is limited by demographic and culture. Perceptions may differ among older adults, or foreigners with different levels of technological development. Future studies could include more diverse populations, tracking of adoption of AI over time, or cross-cultural comparisons to better understand global attitudes. Additionally, emotional trust in AI should be researched more, as boundaries between assistance and empathy are increasingly blurred.

This study investigated how undergraduates perceive and engage with AI in their daily lives. Our findings highlighted that while awareness of AI is high, particularly in practical aspects, usage lags behind, particularly in emotional aspects. Participants trust AI to enhance productivity and convenience but remain skeptical about AI’s emotional capabilities. Privacy concerns and lack of regulation were key barriers to acceptance, globally common. The significance lies in the clear gap between familiarity and adoption, emphasizing the need for better trust, transparency, and digital literacy. Despite the findings being like global studies, a limitation is that the study only contributes localised insights from younger, tech-savvy students. Its novelty lies in directly comparing emotional and practical aspects, an area often overlooked. As AI develops and becomes more emotionally interactive, future studies should explore how attitudes evolve over time, these insights will allow for more responsible and inclusive AI development.

# **References**

Finale Doshi-Velez, B. K. (2017, February). *Towards A Rigorous Science of Interpretable Machine Learning*. Retrieved from arxiv.org: https://arxiv.org/abs/1702.08608

Forum, W. E. (2023). *Navigating Uncharted Waters: A Roadmap to Responsible AI Regulation.* Retrieved from weforum.org.

Horowitz, M. C. (2023, May). *Adopting AI: How Familiarity Breeds Both Trust and Contempt*. Retrieved from arxiv.org: https://arxiv.org/abs/2305.01405

Kingsmith, A. T. (2024). *Simulated Feelings: The Limits of Emotion-AI in Mental Health.*

Mariarosaria Taddeo, L. F. (2018, August). *How AI can be a force for good*. Retrieved from science.org: https://www.science.org/doi/10.1126/science.aat5991

Moravec, V. H. (2024). *Everyday artifical intelligence unveiled: Societal awareness of technological transformation*. Retrieved from journals.economic-research.pl: https://journals.economic-research.pl/oc/article/view/2961

Varghese, T. L. (2024). Digital Therapists and the Trust Gap: User Perceptions of AI in Mental Healthcare.

Voigt, P. &. (2017). *The EU General Data Protection Regulation (GDPR): A Practical Guide.* Springer.

**Acknowledgement**

I did not use artificial intelligence (AI) tools for this assignment.

(\*delete as appropriate)

If you used AI tools for this assignment, please provide the following:

What AI tool was used to answer which question?

For each question that employed an AI tool, please indicate the following:

a) What were the inputs to the AI?

b) What were the outputs of the AI?

c) What you did with the outputs to add value?