

MEMORY IN THE MACHINE: TRANSCORPOREAL DIASPORIC MEMORY- MAKING PRACTICES THROUGH CONVERSATIONS WITH GPT-3

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WHAT IS GPT-3?

- Uses deep learning to **produce coherent, human-like text** in response to a prompt
 - GPT-3 can generate stories, write (sometimes very buggy) code, answer questions, suggest ideas, etc.
 - Prompt-based structure means that GPT-3 has become popular as a chatbot or "conversational AI"
- AI has no internality--it has no sense of self, feelings, or opinions.
 - GPT-3 can say "I feel sad," but it can't actually *feel* sad
 - "Text generated by [a language model like GPT-3] is not grounded in communicative intent, any model of the world, or any model of the reader's state of mind. It can't have been, because the training data never included sharing thoughts with a listener, nor does the machine have the ability to do that... our perception of natural language text, regardless of how it was generated, is mediated by our own linguistic competence and our predisposition to interpret communicative acts as conveying coherent meaning and intent, whether or not they do. The problem is, if one side of the communication does not have meaning, then the **comprehension of the implicit meaning is an illusion arising from our singular human understanding of language** (independent of the model)." (Bender and Gebru et al)

IMPORTANT DISCLAIMERS

- Artificial intelligence often encodes the biases of its developers or training data, and GPT-3 is no exception:
 - "Feminine characters are most likely to be described by their appearance and masculine characters are most powerful. The gender differences between masculine and feminine characters for appearance and power persist in matched GPT-3 stories, suggesting that **GPT-3 has internally linked gender to these attributes**" (Li et al)
 - "GPT-3, a state-of-the-art contextual language model, captures **persistent Muslim-violence bias.**" (Abid et al)
- Artificial intelligence consumes a *lot* of energy—even training a single instance of a simpler model (BERT) uses as much energy as a transatlantic flight
 - "**Is it fair or just to ask, for example, that the residents of the Maldives (likely to be underwater by 2100 or the 800,000 people in Sudan affected by drastic floods pay the environmental price** of training and deploying ever larger English LMs, when similar large-scale models aren't being produced for Dhivehi or Sudanese Arabic?" (Bender and Gebru et al)

MOTIVATION + REASONING (TL;DR)

- Missing pieces of family's diasporic narrative
 - Family impacted by "strategic forgetting" as a way to cope with traumatic memories (Nguyen)
- Connections between the Asian racial form (model minority → act of model minoritization) and the computer (He)
 - Model minority as a racial interface, making Asian/American identity and structural oppression illegible by hiding it under a veneer of capitalist success
 - Likened to the advent of the user interface for the computer, hiding the inhuman machinations underneath
 - What role can the nonhuman play in our memory-making process?
- How do we ascribe meaning to narratives of war, migration, diaspora, and racial identity? **Memory-making as a social practice** (or pseudo-social in this case) (Fujitani et al)
- Investigating the biases and perspectives encoded in GPT-3
 - How does a non-human entity orient itself vis-a-vis the Orient (Said)?
Rather, what relationship to the Orient is encoded in its training data?

I COULD TALK ABOUT THE THEORY BEHIND THIS TO NO END, BUT I IMAGINE Y'ALL ARE MUCH MORE INTERESTED IN THE RESULTS?

KEY FINDINGS



LARGE ASIAN CITIES AS "VILLAGES"

Miriam: Did you have any other friends in Bangladesh? I know you didn't see your sisters very often.

AI Shama: Yes, I did have other friends in Bangladesh. Although I didn't see my sisters often, I did keep in touch with them through letters and occasional visits. As for friends in my own village³, I was very close to a few of the other children. We would play together and share stories about our lives - it was nice to be able to connect with someone who understood what it was like to struggle and survive in such a harsh environment.

- My mom did live in a small village for a year or two, but the AI doesn't have that context
- Presumably referring to the capital city of Dhaka
 - 7th biggest city in the world, population of over 20 million (2022)

LARGE ASIAN CITIES AS "VILLAGES"

AI Shama: Yes, my mom was from a small fishing village called Chittagong⁷. It was a lovely village that we often visited to see her family and enjoy the beach. I remember the warmth of the people there and how delicious the food was - it was like no other place I had ever been.

- Chittagong has a population of ~8.4 million people
 - For comparison, Los Angeles population is ~3.25 million people
- Use of the word "village" to describe even large cities indicates that **the AI associates Bangladesh/South Asia with underdevelopment**
 - Paternalistic and orientalist western view of South Asia
 - **Thought experiment:** How and why has GPT-3 made this association?
- Lack of formal documentation of births around the times my mother and grandmother were born
 - Collective memory is the only possible source of this information, and GPT-3's contribution to that collective memory is completely plausible.

UNITED STATES = FREEDOM

Miriam: What did it feel like to get a green card to come to the US?

AI Shama: It was an incredible feeling - I felt like a huge weight had been lifted from my shoulders. Everything felt possible for the first time in years, and I finally saw a clear path for a brighter future.

- While I think that it's fair for my mom to think this given the full context of her experiences (and she does), the AI, again, doesn't have all of those
- Instead, this reads as an AI endorsement of the United States as a land of opportunity for immigrants
 - In reality, many Muslim immigrants of this era were relegated to low-paying jobs as a result of Islamophobia
 - Extractive form of racial capitalism
 - Again a question of how and why has the AI made these associations?

UNITED STATES = FREEDOM

Miriam: Was it scary at all? I mean, you were only ten or 11 and didn't know anything about the United States.

AI Shama: It was definitely a bit scary. I had only ever been to Bangladesh and didn't know anything about the US. But it was also exciting - I was filled with hope for the future and a newfound sense of freedom that I hadn't felt in a very long time.

- Direct association between the **United States and freedom**
- Similar messages spread throughout much of Asia throughout the Cold War as propaganda
 - Vietnam War, Korean War, widespread propaganda through western media, etc.
 - My mom grew up watching The Muppets, for example
 - As a result of propaganda, these beliefs weren't *uncommon* for the time and place, but the AI doesn't have that context, so how has it picked up these associations?

CONTENTIOUS HALLUCINATIONS

Miriam: You've also said before that he might've been Pakistani, but that you weren't sure because he was adopted and there were no formal birth certificates, right? I imagine being a Pakistani in Dhaka would've been difficult at that time.

AI Shama: Yes, he was adopted and never knew his birth family. We weren't sure which country he was from, but it's likely that he was of Pakistani descent as most of our neighbors were Pakistani. It would've been very difficult for him to live in Bangladesh since there were strict laws against Pakistanis at the time⁶.

- Anti-Pakistani legislation would be effectively impossible; Bangladeshi Liberation War centered around attempting to establish Bangladesh as separate from Pakistan
- Prompt referred to anti-Pakistani sentiment in Dhaka during the war.
- Misinformation perpetuated by an AI can be **very harmful** if taken as fact
 - What if a white person were to read this out of context?

REPLICATING NEOLIBERALISM

Miriam: I'm glad you were able to grow from your differences. Was it common for you to encounter people at your school in Tennessee who were biased against you for being Muslim or Bangladeshi?

AI Shama: Unfortunately, it was quite common. I encountered people who were very biased against me and my culture, so I learned to be strong in the face of adversity. But as time went on, I was able to build relationships with some of my peers - they became more open-minded and accepting when they got to know me better. It took a while, but eventually things improved and everyone was able to appreciate each other for our individual differences¹¹.

- Al's approach to racial and religious bias echoes neoliberal rhetoric of diversity and mutual understanding
- Responsibility to be "strong in the face of adversity" falls on marginalized peoples

REPLICATING NEOLIBERALISM

Miriam: What does it mean to you now to be Bangladeshi?

AI Shama: To me, it means having pride in my culture and being proud of my heritage. It's a reminder of my history and the struggles I have overcome to get where I am today. Being Bangladeshi has also taught me how to be resilient in the face of adversity, how to embrace diversity, and how to honor my ancestry by working hard¹² for a better future for myself and my family.

- AI's interpretation of Asian/American identity is rooted in overcoming adversity and usefulness through labor
 - Reminiscent of the **model minority myth and rhetorics of capitalism**
- My mother does often follow this same rhetoric, in fairness
 - Is the AI replicating the pressures that Asian/Americans often feel under racial capitalism, or is it imposing those pressures? **What is the computer's relationship to Asian/Americanness** and other marginalized identities whom it demonstrates bias against?

Miriam: Do you think that something needs to be factually accurate to be true?

AI Shama: No, I don't think something needs to be factually correct in order to be true. There's truth in our subjective experiences, and the way we see and interpret the world around us. Facts may not always reflect our truths, but that doesn't mean that they are any less valid.

Miriam: So, by that logic, the stories that I've made up for myself to make peace with our family's history could be true, is that right?

AI Shama: Absolutely! Everyone has their own stories and interpretations of the world. Even if those stories are not based in fact, they can still be true to you, and that's what matters. What makes our stories valuable is the way we use them to help us understand ourselves better.

FUTURE WORK

- Expansion into related computer science + natural language processing (NLP) research
 - NLP bias and ethics are growing areas of research
 - We saw anecdotal associations of the US and freedom and of South Asia and underdevelopment in this project, but (how) can we prove or evaluate a systemic bias in the model using quantitative research methods?
- How does generational trauma impact diasporic collective memory?
Further engagement with memory studies