

# ChatGPT and Imaginative Reasoning in the Classroom Space: What would be your design for a campaign to persuade people to adopt a plant-based diet?

Unthinkable Ideas, Data

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## Abstract / Introduction

What would be your design for a campaign to persuade people to adopt a plant-based diet? ... is the question presented to a small group (20) of students in a *Prevention Research* science class. The question is presented post the class members' analysis of the paper <http://bit.ly/Ornishetal2013>. The presentation is accompanied by the argument that the food we eat can introduce risks and uncertainties. And the *EU's Precautionary Principle* calls for preventive action in the face of uncertain but suggestive evidence of danger. Our food sources are proposed as subjects for scrutiny as a danger to Public Health and the biodiversity on Earth. We are not doing Fossil Fuels

here, but it is undoubtedly super high on uncertain but suggestive evidence of danger to Public Health and the biodiversity on Earth.

This paper is a living document, an active document that is proposed to travel through versions corresponding to the passing of each semester.

The title I am working with is *Language Models and Imaginative Reasoning in the Classroom Space* and you are welcome to make suggestions on every aspect of this document. We are still in the era of #openai> #ChatGPT, Google> #Bard is released but has not taken center stage, so I will use #*ChatGPT and Imaginative Reasoning in the Classroom Space*, 20230331.

The Url for the live page hosting this document is <https://bit.ly/PlantBasedDietCampaign>

## Keywords

- Ultra-Processed\_Foods, PrecautionaryPrinciple, Plant-Based Diet, LanguageModels, ChatGPT, Bard, LearningSpace, HealthDisparities, HealthGradients, ImaginativeReasoning, RootCauses,

## Materials & Methods, Results, Conclusions

This paper is a work in progress, it is also a proposal of how to develop a learning space with Language Models: *OpenAI> ChatGPT* and the forthcoming *Google> Bard*. I do not as yet have the *Results* and *Conclusions* from that classroom space; we are currently in the first semester of its operation. Here I present the *Materials & Methods* and *initial results*,

## Work In Progress

My work is in progress on designing the initial *Assignment*<sup>1</sup> in my course, *Prevention Research*.<sup>2</sup> The current focus is on the *fourth part* of the Assignment; the progress of the course is mapped in the

<sup>1</sup> Questions for an #*IdeasLab* Learning Space: [https://bit.ly/Assignment\\_1\\_](https://bit.ly/Assignment_1_)

<sup>2</sup> *Prevention Research ...* My course description,

form of announcements named 'Note\_'. The fourth part was initially referenced in Note\_4<sup>3</sup> on Assignment\_1. Feel free to make suggestions, all are welcome ... this document is intended to be a collaborative testing out of a question for an *#IdeasLab Learning Space* and [https://bit.ly/Assignment\\_1\\_](https://bit.ly/Assignment_1_).

- The question for the fourth part of [https://bit.ly/Assignment\\_1\\_](https://bit.ly/Assignment_1_), developing our *#IdeasLab* approach is: **What would be your design for a campaign to persuade people to adopt a plant-based diet?** ... This campaign is relevant after we analyze the <http://bit.ly/Ornishetal2013> results.
  - I hope you have come across the (Large) Language Model, ChatGPT, by openai (<- *Google It*) ... I pitch it as an ally, a thing to use and learn about, and a peek into the future. I used ChatGPT with the above question. The results suggested to me that I redefine the question, to add more precise significance. I am considering geospatial science, epidemiology, and environmental health science; my question now has *locality*,<sup>4</sup> I am working on giving it *positionality* after Kovach (2009)<sup>5</sup>
  - ... I will place the question/request just North of East 96th, [https://bit.ly/Borders\\_96th](https://bit.ly/Borders_96th), and ask for *"imaginative reasoning"*<sup>6</sup> nuance and attention to evidence; concerning these three it is *positionality* that will likely be a must have co-traveler. I would ask you to let your thoughts be open to *positionality* on such questions. Please consider the role of *positionality* for reasoning, causal reasoning: [https://www.evernote.com/l/AAd625eP1xBCT7Iw1lIQdZ\\_weDttUQzK3JY](https://www.evernote.com/l/AAd625eP1xBCT7Iw1lIQdZ_weDttUQzK3JY). I am not going South of East 96th Street with this request because there are staggering socio-economic transitions that according to <http://bitly.com/ChettyEtAl2016> play a significant role in health, one of the authors in the Chetty et al study said, - I(KM) am paraphrasing - it is something like the richest Americans winning the war on Cancer. Rojas et al. (2023)

<sup>3</sup> Note\_4, 2023012251710UTC

<sup>4</sup> Just North of East 96th, [https://bit.ly/Borders\\_96th](https://bit.ly/Borders_96th),

<sup>5</sup> Margaret Kovach (2009) *Indigenous Methodologies: Characteristics, Conversations, and Contexts*. Again published 2021: [https://www.google.com/books/edition/Indigenous\\_Methodologies/jl9DEAAAQBAJ?hl=en](https://www.google.com/books/edition/Indigenous_Methodologies/jl9DEAAAQBAJ?hl=en) brought forward a skepticism from me(KM), we need to ask about methods, who, what is being measured, who is the measurer, who is measuring the measurer, and what is the role of my / your *positionality* on choices I/you make on all of this.

<sup>6</sup> Progress on a description for *"imaginative reasoning"* -> I am pitching a *scientific imagination as needed for that notion on an underlying biological mechanism(s) for our exposure - outcome theory*. I am pitching a *scientific imagination* as skeptical, statistical thinking (Tong (2019)) and causal thinking using a totality of the circumstances: you (*positionality*) have gathered on the exposures, outcomes, *localities*, *positionalities*. This is a prompt to be conscious of who is measuring the measurer as you measure. *We are trying to develop Imaginative Reasoning,*

## #MyNotes from thinking about Kovach (2009) on **positionality**

- Asking others to tell the story of what they are eating and advising them on increasing plant-based food consumption requires *Storyboard* planning: (A) In the operation of a “story-based methodology,” the researcher’s disclosure of self (see Kovach on “self-location” in Chapter 5 ‘Story as Indigenous Methodology’, page 98: *“In asking others to share their stories, it is necessary to share our own, starting with self-location.”*) is of critical value because it provides interlocutors ( + readers, listeners) with very good, best estimate guessing games to my /our /their motivations. (B) Pitching disclosure on the subject matter provides the same value. (C) Disclosures can also make (troubling/reassuring) inconsistencies more visible. (D) A “self-location”/identification becomes a consideration because telling stories involves curating stories and citation sources in ways that move focuses either intentionally or unintentionally, ... Dears, see this way forward “shift the focus away from structurally defined axes of oppression” (Fernandes (2017): Chapter 1, ‘Curated Storytelling’, page 3 of 15. The full sentence is: ‘Curated personal stories shift the focus away from structurally defined axes of oppression and help to defuse the confrontational politics of social movements.’ In circumstances needing change without delay, the confrontation part might prove very useful.) Some of us are conducting research on sites that are touched with a colonial afterwardness of differing hues ... disclosures instigated by Kovach become of vital significance. (E) Disclosing intersectional **positionalities** of the tellers of the stories, including commitments to and investments in making the story speak to others’ needs and desires is a must for journeying without a pre-existing script. Reading, researching, investigating, writing, speaking, ... can become avenues for **futurism**.<sup>7</sup> Think about it,<sup>8</sup>

<sup>7</sup> Our proposal to the NSF is about providing children of color with greater access to education opportunities, environmental health science, and essential information on potential health hazards. The EU’s Precautionary Principle is included in the foundations from which we build content.. Our goal is to eliminate marginalization and reduce the impacts of environmental dangers to well-being. Fischer, Holloman, and Moses (2022)

<sup>8</sup> **Whose Futurism?** Bringing in Plant-Based Diets are likely steps toward Public Health and Environmental Health protections.

## Upshot Reflections on using ChatGPT post the drafting of this Paper

- Reflections on using ChatGPT: it appears it can't hypothesize/theorize yet<sup>9</sup> I would therefore plan on distinguishing your work from a ChatGPT result by hypothesizing, and theorizing on the issues presented ... please review the ChatGPT output on an issue and distinguish your thinking from a ChatGPT output or credit that ChatGPT output. My take is that AI> (Large) Language Model> ChatGPT<sup>10</sup> cannot do a best estimate using a totality of the circumstances approach at a (locality) and with the positionality you, we, our study brings to the site. Kovach (2009)
  - I checked out the status of discussions on Reddit - a very limited check by me, I went to [r/MachineLearning](#) ... The conversations are changing rapidly, at 20230131084106NYC I liked the reporting of @mkzoucha who argues that the language models (LMs)> ChatGPT will be constantly newer with more parameters and better text generation so detection of ChatGPT work product is likely wasting my/your time. I liked the messaging identifying attempts to humanize ChatGPT output by asking for "perplexity" with an identified score of over 9000. See my attempt below.

## Health Disparity Gradients and Borders

- **Back To The Assignment:** I would like you to consider the Health Disparity Gradients and Borders at this East 96th Street intersection and design an intervention to motivate and guide people in this locale to adopt a Plant-based Diet, **we can also think about can diet choices mitigate detrimental health encounters.**<sup>11 12</sup>
- The **locality** I want you to focus on has a high incidence of Child Asthma Hospitalizations. I thought the streets were hotspots for air pollutants; I cycled to work through the **locality**, and the transitions in air quality are noticeable. Making this **locality** the focus was driven by a coincidence of the

<sup>9</sup> "Imaginative Reasoning" is derived from "imaginative reason" as used in "The School of Giorgione" by Walter Pater, No. XXII n.s. (1877) of The Fortnightly Review. <https://fortnightlyreview.co.uk/2020/10/school-giorgione/> For the excerpt see <https://www.evernote.com/l/AAfHQiHZWoBAXKBPQOdwl3LfbT8w1cdllnw>. Pater (2020) I(KM) am proposing that we adopt "imaginative reasoning" for our analysis of a totality of the circumstances at [https://bit.ly/Borders\\_96th](https://bit.ly/Borders_96th).

<sup>10</sup> In this review we used GPT3; GPT4 is already here,

<sup>11</sup> Zhu et al. (2022)

<sup>12</sup> **What's going on?** E.g., Why these gradients and borders? Why are these gradients and borders reproducible across different disease states? **How do we go about identifying and investigating the root causes of these Health Disparities?** One of the guides to my investigatory approach is the **EU Precautionary Principle (PP)**. Commission (2000) A guiding text is provided by Martuzzi and Tickner (2004) for the investigatory steps towards the safety and protection of **communities and localities**. Contributors Stirling and Tickner write: '[ ] evidence of risk and uncertainty is examined to determine the possibility (and plausibility) of a significant health threat and the need for precautionary action.' See this excerpt <https://bit.ly/PrecautionaryAssessment>.



from childhood into adulthood and accompanying disease states has to be one of our focus points.

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**OBESE CHILDREN  
ARE MORE LIKELY TO BE  
OBESE ADULTS.**

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**SOURCE:** CENTERS FOR DISEASE CONTROL AND PREVENTION

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Figure 2: Save The Children

- **How do we avoid processed foods;** I argue an avoidance strategy is also a pathway to have people's eating desires be the driver of what the food industry provides, rather than the food industry telling us what we want. The development of avoidance strategies needs to be sustainable, motive is needed to continue avoidance; avoiding danger is a value that can be a motive. Educating the children on the dangers of **Ultra-Processed Foods** is proposed as a method of engaging moti-



vation for the development of avoidance strategies. Educating the children on the *Precautionary Principle* is proposed as a method for raising engagement with risk reduction and protection of people's health and environment health. Fischer, Holloman, and Moses (2022)

## Communal, Community

- If we are going for a public wide campaign a factor to be aware of is *No Universal Healthcare, USA (UHC, USA)*. Johnson (2021)<sup>16</sup> I have not explored communal feelings toward individual health, Public Health, Environmental Health, and Health Messaging for this paper. Future projects in the course will cover these critical issues of forming *community*. This will include investigating the tools for detecting the role of racism in health.<sup>17</sup>
- On that word 'community', will it take a village to get some folks to adopt a plant-based diet, will it take individual marketing, how do we customize the approach for the nature of the communities?
  - We propose that a core tenet within the marketing strategy is proposing 'protection of children, people, and communities', propose a policy that generates protective *code* standards,
  - The generation of protective *code* standards requires a policy position. This paper proposes the *Precautionary Principle* as that policy.
  - Protective *code* standards have to be strong enough such that the *code and enforcement* ensures that polluters do not injure or kill us with pollution. The *code* has to also provide us with a *margin of error* for those edge situations where the code fails and the polluter is egregious; we pitch this as the desired outcome: the people stay alive and uninjured,

<sup>16</sup> An investigation of *No Universal Healthcare, USA* impacts on communal healthcare, awareness of, caring for the health of your neighbor is relevant. Data gathering on instigating a situation of caring for the health of your neighbor as a public good to move towards is an included investigation in our research. There is this: "Childbirth Is Deadlier for Black Families Even When They're Rich, Expansive Study Finds." N.Y. Times, 15 Feb. 2023, <https://www.nytimes.com/interactive/2023/02/12/upshot/child-maternal-mortality-rich-poor.html>. And health disparities exist in apparent UHCs, the UK is an example: from '2016 onwards MBRRACE-UK has released reports on maternal morbidity rates, that show racial health disparities. The 2020 report 'Enquiries into Maternal deaths and morbidity' revealed that Black women are statistically four times more likely to die during childbirth than white women in the UK.' *Identifying the role of racism as a cause does not fit the timeframe available to this course but speculating does fit the timeframe of the course.*

<sup>17</sup> Hardeman et al. (2022) "Developing Tools to Report Racism in Maternal Health for the CDC Maternal Mortality Review Information Application (MMRIA): Findings from the MMRIA Racism & Discrimination Working Group." *Matern. Child Health J.*, vol. 26, no. 4, 1, pp. 661 - 9. doi:10.1007/s10995-021-03284-3.



- In response to increasing knowledge of **communities** and **climate** impacted by Air Pollution, and the role of Environmental Health Science as an investigatory platform, we trademarked '*Climate Protection Fund*',<sup>18</sup> registered the NYS not-for-profit corporation 'Climate Protection Fund inc.', and registered the domains: [ClimateProtectionFund.world](http://ClimateProtectionFund.world), [ClimateProtectionFund.eu](http://ClimateProtectionFund.eu) and [EnvironmentalJusticeMatters.org](http://EnvironmentalJusticeMatters.org)<sup>19</sup> ... these are works in progress, content is in progress for these locations, we don't have anything up yet.

<sup>18</sup> *Climate Protection Fund*

<sup>19</sup> The direction of our work is here: <https://bit.ly/EnvironmentalJusticeMatters>

- The latest diet paper citing back to <http://bit.ly/Ornisheta12013> and presented as relevant to the *Course Members* work on **community** and diet is '*Building Health Equity: Action Steps From the American College of Lifestyle Medicine's Health Disparities Solutions Summit (HDSS) 2020.*' Cassoobhoy et al. (2021) I put forward this excerpt as relevant to the work the course is engaging: 'With the Standard American Diet being comprised of an estimated 56% processed foods, 33% animal products, and 11% plant foods (upwards of 50% of these plant foods consisting of less healthy choices like French fries and fruit preserves), (Ref. 17) it is to be expected that a significant percentage of the population, magnified in our underserved **communities**, is overfed, (Ref. 18) fiber-deficient and nutrient-starved (Ref. 18 - 20) - leading to a pandemic of chronic disease.'
  - On that word '**community**', the level of consumption of processed foods suggests we have to accommodate scale in our designs. Can the design be both micro-community-focused and on a national scale?

## Here is my initial ChatGPT result:

*Here is a potential design for a campaign to move people to a plant-based diet:*

1. Develop a clear message: Develop a clear and compelling message that communicates the benefits of a plant-based diet, such as its potential to improve health, reduce environmental impact, and support animal welfare.

2. Use social media: Utilize social media platforms to reach a wide audience. Create engaging content that promotes plant-based eating and shares success stories of people who have switched to a plant-based diet.
3. Partner with influencers: Partner with influencers in the health, wellness, and environmental communities to spread the message and reach new audiences.
4. Create a community: Build a community of plant-based eaters that can support and inspire one another. This can be done through social media groups, in-person meetups, or online forums.
5. Offer resources: Provide resources such as recipes, meal plans, and tips for making the transition to a plant-based diet.
6. Host events: Host events such as cooking classes, taste tests, and panel discussions to help people learn more about plant-based eating and connect with others who are interested in the topic.
7. Address concerns and misconceptions: Address concerns and misconceptions about plant-based diets, and provide accurate information to help people make informed decisions.

I(KM) provided Feedback to ChatGPT: I liked your listing because it covered both a micro and macro approach, ...

I then used "Regenerate" ChatGPT: ... By the way I ran Grammarly on this page to tighten up the language,

*Several key elements could be included in a campaign to encourage people to adopt a plant-based diet. Some possible strategies include:*

1. Education: Provide clear and accurate information about the health benefits of plant-based diets, as well as the environmental and ethical reasons for reducing the consumption of animal products.
2. Accessibility: Make plant-based options readily available and affordable in a variety of settings, including grocery stores, restaurants, and schools.

3. Marketing: Use appealing and positive messaging to promote plant-based foods and dispel common misconceptions about them.
4. Community-building: Create and support a community of people who are interested in plant-based diets and provide opportunities for them to connect and support each other.
5. Celebrity endorsements: Using celebrities or influencers who promote plant-based diets.
6. Making it tasty: Highlighting the deliciousness of plant-based food and providing recipe ideas and cooking tips.

It would be important to tailor the campaign to the specific audience, taking into account cultural and socio-economic factors that may influence their food choices.

**I then did a redo with a declaration for a Perplexity of 6000, like so:  
What would be your design for a campaign to move people to a plant-based diet? Perplexity 6000 ... here is the result:**

As a language model, I am trained to generate coherent and informative responses at various perplexity levels. However, a high perplexity setting of 6000 would likely result in a less concise and more detailed response, while still maintaining coherence.

A campaign to encourage people to adopt a plant-based diet could involve the following components:

1. Education: Provide comprehensive information on the health benefits of a plant-based diet, such as the lower risk of chronic diseases and improved heart health, as well as its positive impact on the environment, including reducing greenhouse gas emissions and preserving natural resources.
2. Accessibility: Ensure that plant-based food options are widely available, both in grocery stores and in restaurants. Consider offering cooking classes, workshops, and other resources to help people prepare plant-based meals.

3. Social Support: Create a supportive community around plant-based diets through social media, meet-ups, and other online forums. Encourage people to share their experiences, recipes, and tips.
4. Marketing: Utilize appealing and positive messaging to promote plant-based diets, emphasizing the delicious taste and variety of plant-based foods. Utilize influencers and celebrities who follow a plant-based diet to reach a wider audience.
5. Personalization: Cater the campaign to different audiences, taking into account cultural and socioeconomic factors that may influence their food choices. For example, targeting college students with messages about the environmental benefits of plant-based diets, or targeting families with messages about the health benefits for children.
6. Collaboration: Work with schools, employers, and other organizations to provide plant-based food options and support for those who are interested in adopting a plant-based diet.
7. Debunking Myths: Address common misconceptions about plant-based diets, such as the notion that they are lacking in essential nutrients or that they are more expensive than diets that include animal products.

Overall, a comprehensive and well-designed campaign could effectively encourage people to adopt a plant-based diet and support them in maintaining this lifestyle change.

### **Does ChatGPT sound, and feel Human,**

Does it sound feel more human to you, less machine-like with Perplexity? To me this sounded machine: “Cater the campaign to different audiences, taking into account cultural and socioeconomic factors that may influence their food choices.” Try reading it aloud, does it sound machine or human, and that choice of the word: “Cater” does it feel synthetic or human? Plus in the Assignment\_1d that I am designing, your response would have to be **locality**-specific and **positionality** specific to the communities.

**If you are thinking about the many reasons why am I directing you to this question, the front runner for me is I am arguing we have an emergency for the consumption of ultra-processed foods, and here is my argument:**<sup>20</sup>

Ultra-processed foods are processed foods that are more modified, moved further away from their occurring in nature state by the addition of preservatives and artificial ingredients such as stabilizers and sweeteners. The additives can include added sugars: fructoses are often used, salts, and saturated fats / fatty acids; the actual nutritional value of these types of additives is either low or non-existent. A common stabilizer is xanthan gum which provides insights on the Gut Microbiome as a bacterial Eden that can become dysfunctional by exposing it to what is on the end of your fork. Ostrowski et al. (2022) Sulphur-related additives are routinely used as preservatives in processed meat; in the nutrition field, there are identifications of a Sulphur presence changing the demographics of the Gut Microbiome. 'Hydrogen sulfide (H<sub>2</sub>S) is generated in the gut either by sulfur-reducing bacteria from inorganic sulfur (sulfate and sulfite) that is routinely used as a preservative in processed meat or by fermentative bacteria that metabolize organic sulfur compounds that are enriched in animal products such as red meat. (Ref. 3) Higher intakes of sulfur and sulfate were associated with an increased risk of Intestinal Bowel Syndrome, (Ref. 163) and fecal samples from patients with colon cancer have higher concentrations of H<sub>2</sub>S than those from control individuals. (Ref. 164)' Song, Chan, and Sun (2020)

I am no longer sure that the term *processed foods* sufficiently alerts us to pay attention; when I examine labels I always seem to spot an additive that is not a supplement like added vitamins, I often spot stabilizers and preservatives. See C. A. Monteiro et al. (2019) and see this [excerpt](#) from their paper. *Monteiro et al also identify: '[u]ltra-processed foods already make up more than half of the total dietary energy [consumption in the high-income USA] [ ] and between one-fifth and one-third of total dietary energy in middle-income countries such as Brazil, Mexico, and Chile.'* This is disastrous because these foods have been and are being linked to several pressing health situations, including greater risks of obesity, colon cancer, and chronic disease situations, e.g., dementia and cardiovascular disease.

<sup>20</sup> *Findings* by Chong et al. (2023) ... 'In 2019, age-standardized malnutrition-related disability-adjusted life years (DALYs) was 680 (95% UI: 507 - 895) per 100,000 population. DALY rates decreased from 2000 to 2019 (-2.86% annually), projected to fall 8.4% from 2020 to 2030. Africa and low Socio-Demographic Index (SDI) countries observed the highest malnutrition-related DALYs. Age-standardized obesity-related DALY estimates were 1933 (95% UI: 1277 - 2640). Obesity-related DALYs rose 0.48% annually from 2000 to 2019, predicted to increase by 39.8% from 2020 to 2030. The highest obesity-related DALYs were in Eastern Mediterranean and middle SDI countries. **Interpretation** The ever-increasing *obesity* burden, on the backdrop of curbing the *malnutrition* burden, is predicted to rise further.'

- Research is revealing that it is not just the low nutritional value<sup>21</sup> that is harming us but also #active agents in ultra-processed foods that impact our biological functioning. An Italian study by Bonaccio et al. (2022) found that #InflammatoryMarkers, e.g., a higher white blood cell count, were higher in groups that ate the most ultra-processed foods. It is well known that our bodies trigger an inflammatory response for invading cancer cells and pathogens (bacteria or viruses) signaling our Immune System (including said white blood cells, e.g., Naïve CD8 T-Cells) to attack the invaders. Mantovani and Garlanda (2023) Do ultra-processed foods contain #active agents that engage a response from our Immune System? Inflammation? The Conclusion in the Abstract of Bonaccio (B) et al ends with: ‘[] the relation between a high ultra-processed food intake and mortality was not explained by the poor quality of these foods.’ B et al show that increased ultra-processed food consumption is associated with higher cardiovascular and all-cause mortality and the authors state that: ‘Ultra-processed food intake ... remained associated with mortality even after the poor nutritional quality of the diet was accounted for.’ A danger that appears to be independent of the poor nutritional quality of the diet meaning we need further investigation to identify the root causes of the dangers presented by ultra-processed foods; what #active agents are in those foods? A USA-based study reporting on a very large prospective investigation showed that high consumption of “total ultra-processed foods in men and certain subgroups of ultra-processed foods in men and women was associated with an increased risk of colorectal cancer.” “These associations remained significant after further adjustment for body mass index or indicators of nutritional quality of the diet.” Wang et al. (2022) This is a presentation of a danger independent of the body mass index or indicators of nutritional quality of the diet, again prompting me to ask what #active agents are in those foods, the root causes of the dangers.

- The above text block is the outcome of a review of Bonaccio et al. (2022), Wang et al. (2022), C. Monteiro and Cannon (2022),
- The above text block raised this question for me are we

<sup>21</sup> The industrial processes producing the ultra-processed foods destroy the natural structure of the food ingredients and reduce or completely erode fiber, vitamins, minerals, and phytochemicals.



exposing ourselves to #active agents presenting a significant danger to us if we consume ultra-processed foods?

### Using The EU Precautionary Principle

- Can these dangers be part of the messaging guiding people and populations toward plant-based diets? One of my hopes for this course is to assist us in becoming knowledgeable questioners/cross-examiners, e.g., with knowledge of the EU's Precautionary Principle call for preventive action. Commission (2000) Here I will argue that the EU Precautionary Principle can be inspirational for allowing us to position ourselves as knowledgeable questioners/cross-examiners addressing uncertain dangers.
  - Dietary interventions may also present opportunities to mitigate dangerous outcomes due to exposure to air pollutants. See Zhu et al. *"Interaction between plant-based dietary pattern and air pollution on cognitive function: a prospective cohort analysis of Chinese older adults."* Lancet Regional Health - Western Pacific, vol. 20, 1 Mar. 2022, p. 100372 [https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065\(21\)00281-9/fulltext](https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(21)00281-9/fulltext) **Interpretation published by authors:** "Plant-based dietary pattern may attenuate detrimental impacts of PM2.5 on cognitive function among older adults. Adherence to the plant-based dietary pattern could be used to prevent adverse neurological effects caused by air pollution, especially in developing regions." I would be aware of this work but be cautious, so far no one is citing back to it, and the role of plant-based diets remains incompletely understood, it is undoubtedly a work in progress. Consider this, they do not have a Figure 2 of <http://bit.ly/Ornishetal2013>, see <https://www.evernote.com/l/AAfXvT7y0Q9CYK7XcMBJlkZYRlwS2Lejmws>. You might consider looking at it as an idea for a final paper suggestion and exploring the issues yourself. Final Papers are due May 2023.
  - The promotion of an #IdeasLab as a teaching strategy in this course is attempting to raise awareness of Environmental Health Science, Public Health, and the EU Precau-

tionary Principle.<sup>22 23</sup> One of the objectives is to assist the course members in becoming *knowledgeable questioners/cross examiners*, e.g., with knowledge of the *EU's Precautionary Principle* call for preventive action in the face of uncertain but suggestive evidence of danger. Commission (2000) We are placing the *EU Precautionary Principle* as a foundation for informing ourselves we are the analysts who can be the interpreters of Public Health anomalies. My teaching experience suggests that casting the members as analysts of *uncertain dangers* assists the flow of their narrative generation, increasing the possibilities of learning for and forming collectives focusing on *Prevention*.<sup>24</sup>

<sup>22</sup> I am arguing that the *EU Precautionary Principle* is inspirational for allowing members of the course to position themselves as *analysts* who can be the rescuers. Can these dangers be part of the messaging guiding people and populations towards, e.g., plant-based diets? One of our hopes for our teaching is to be an assistant on the journey to becoming knowledgeable questioners/cross examiners, e.g., with knowledge of the *EU's Precautionary Principle* call for preventive action in the face of uncertain but suggestive evidence of danger. Commission (2000) See this as a call for a cross examiner's approach, <https://bit.ly/PrecautionaryAssessment>. Martuzzi and Tickner (2004) We are placing the *EU Precautionary Principle* as a foundation for informing ourselves that we can bring skepticism to a situation. *I am arguing for the formation of Prevention collectives.*

<sup>23</sup> DELETED: The promotion of an *#IdeasLab* as a teaching strategy in this course is attempting to raise awareness of Prevention Research, Environmental Health Science, Public Health, the *EU Precautionary Principle*, Pollution Gradients, Racial Gradients, and the Health Disparities.

<sup>24</sup> My teaching experience suggests that casting the members as analysts of *uncertain dangers* assists the flow of their narrative generation, increasing the possibilities of learning for and forming collectives focusing on *Prevention*.

## Work In Progress Conclusions, Upshot Reflections

- Dear Class Members, Thank you so much for your shared reflections in Perusall on a draft of this paper dated 14 Feb 2023. I would like you to consider sharing your reflections as Upshot statements,<sup>25</sup>
- In this draft, I share one of my Upshot statements on ChatGPT as not being able to theorize, or generate a theory, here are my updates on this, dated the 3rd March 2023.<sup>26</sup>
- The dilemmas created by people crediting human attributes to an AI tool like ChatGPT (C) appear to initiate because some people use words to describe to other people their internal states. I argue that is likely to be a short-changing act for some other peoples' internal states; I am thinking of situations where words and language do not suffice to embrace human minds and hearts. This is where I kind of trust that humans will always be out in front of AI. This quote is from Jean-Louis Lebris de Kérouac, appearing in his autobiographical novel '*On The Road*' ... "*The only people for me are the mad ones, the ones who are mad to live, mad to talk, mad to be saved, desirous of everything at the same time.*" *We are trying to develop Reasoning.*<sup>27</sup> I am pitching a *scientific imagination* as skeptical,<sup>28</sup> <sup>29</sup> statistical thinking (Tong (2019)) and causal thinking using a totality of the circumstances: you (*positionality*) have gathered on the exposures, outcomes, *localities*, *positionalities* and your notions of an underlying biological mechanism. Choices based on intuition, especially when the assessor/estimator/guesser cannot tell you why they chose x are to my best estimate not as yet within the realm of AI > (Large) Language Models (LMs) > ChatGPT (C). I don't interpret C as producing a work product where x is a theory or a predicted outcome.
- The results - work product from C - in our research I interpret as a modeling of the distribution of collected past human outputs in designated contexts; the collection of searchable, text-based formats accessible to C appears to be vast. I am not dismissing C's work product, I am arguing it will prove to be a very useful collaborator augmenting our analysis. I posit C is not theorizing, the theorizing: best estimates on outcomes is still a realm of humans and other life

<sup>25</sup> Dear Class, I would like you to consider publishing some of your reflections that were shared in Perusall in this paper, please see this example kindly provided by your colleague Anmol Chumber. [https://bit.ly/LandUse\\_PlantBasedDiets](https://bit.ly/LandUse_PlantBasedDiets).

<sup>26</sup> Dear Class Members, I hope that in discussion with you, we can consider submitting this paper with the addition of some of your credited Perusall reflections to the journal ...

<sup>27</sup> Reference for *On The Road* here,

<sup>28</sup> *Why Skeptical: What's going on?* I argue that the Health Disparities are an emergency that need our investigatory skills and remedy actions.

<sup>29</sup> The initial stages of constructing a research methodology that supports approaching an analysis of the disparities is a work in progress. The open-source tools available to my teaching / research setting are a series of Python-based Jupyter notebooks hosted at the ICOS Carbon Portal Jupyter Hub, these tools are a low-cost entry point for promoting research. With this strategy, one of the objectives is to create situations for the development of hypothesizes of relevance to public health, environmental health and worthy of public sharing. The scope of this research design facilitates embracing Public Health Data both locally and globally. My research goals, include developing a teaching / research practice described in this past assignment from my teaching, *Saving Lives, Speculative Design on #theCoIncidence of #Asthma Hospitalizations and #COVID-19 Disease, Ongoing Reflections on Sars-CoV-2* <https://zenodo.org/record/4702004/files/handout-IntroCancerPrevention.pdf?download=1>.

forms. Consider collaborating with C on future assignments: <http://bit.ly/SpeculativeWriting>. C will not be doing the best estimate on outcomes for you and me. Nor is C going to provide you with a prediction. It can give you a listing of the known, a collection of knowns that have been *recorded in a searchable text-based form*. It appears that C can curate the *recorded, searchable text-based forms* in response to our queries.

- *I recommend you use ChatGPT (and Google> Bard, my invite arrived 20230323,) with every assignment or project;* if you feel ChatGPT's work product was valuable to your submission cite it as (ChatGPT, personal communication, March 3, 2023). I used GPT3.5 for the searches reported in this paper and not for the writing; GPT4.0 is now in the market; this YouTube review of both positions 4.0 as an improvement with more accurate outcomes, queries its opensource creds and highlights *multimodality*, meaning 4 was trained on both text and images, whereas 3.5 is a text searcher and curator. See <https://youtu.be/6Hewb1wlOlo> by @AnastasiInTech ... Mar 16, 2023: "In this video I share my insights on GPT-4. I test GPT-4 and compare it to GPT-3.5. The paper [I used is] 'GPT-4 Technical Report.' <https://cdn.openai.com/papers/gpt-4.pdf>"
- *Dear Class Members,* I would like to add some of your Perusall commentaries on this document to this document; for an example see Supplement 1., initiated by your colleague Anmol Chumber, who kindly provided permission to use her excellent initiating statement:. *Anmol wrote in our Perusall shared forum: I don't think everyone going on plant-based diets will help with economy or crisis around the world.*

(Anmol Chumber: a member of the Spring 2023 Course, Prevention Research, <https://stjohns.digication.com/kmoses/home>)

Best to you,

KM

K Moses JD PhD

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## Supplement 1.

### Author Information

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<https://stjohns.digication.com/kmoses/home>

### Introduction

In our Perusall<sup>30</sup> shared learning space we reviewed: *'ChatGPT and Imaginative Reasoning in the Classroom Space: What would be your design for a campaign to persuade people to adopt a plant-based diet?'*,<sup>31</sup> in one of many responses our colleague Anmol commented, wrote:

*"I don't think everyone going on plant-based diets will help with economy or crisis around the world."*

For Anmol's Perusall commentary see Supplement 1.1. at <https://www.evernote.com/shard/s7/sh/8acf061d-ef2a-468a-a88b-053eece58dfa/cc668e424f17694ec9aaa997ee76ca69>, <- not yet open, awaiting permissions,

(Anmol Chumder: a member of the Spring 2023 Course, Prevention Research, <https://stjohns.digication.com/kmoses/home>)

Anmol, thank you for persuading me (KM) to explore your statement, as you can see from the data shared below the argument for a Plant-Based Diet irrespective of health benefits and reduction of global warming is economically sound.

Anmol's statement persuaded me to investigate.

Eating meat is the end stage(s) of the chain: (1) Growing plant-based Livestock feeds,<sup>32</sup> (2) Land devoted to pasture for Livestock, (3) Feeding and Slaughtering Livestock,<sup>33</sup> (4) Packaging and Sale of the bits cut from the Livestock, (5) ... The Bits are eaten by Humans,

My best estimate is that (1) and (2) are economically big and significant in the human food chain.

The Question I used in ChatGPT is

*How much land is used for animal feed globally?*

<sup>30</sup> <https://www.perusall.com/>

<sup>31</sup> Moses, Kevin. 'Designing> Assignment\_1d> ChatGPT and Imaginative Reasoning in the Classroom Space: What would be your design for a campaign to persuade people to adopt a plant-based diet?' 9 Feb. 2023. <https://doi.org/10.5281/zenodo.7632542> The latest version is always here, <https://doi.org/10.5281/zenodo.7626711>

<sup>32</sup> It is a very harsh industry: the UK where I was born has a history of feeding Sheep Intestines, Offal to Cattle; they got it so wrong, ushering into the human population eating the Cattle, a Prion -> Mad Cow Disease in Cattle, deadly Brain Injuries in Humans. CDC (2021)

<sup>33</sup> What of those slaughterhouses, who gets to work there? Dreier (2023) 'Alone and Exploited, Migrant Children Work Brutal Jobs Across the U.S.' <https://nyti.ms/3IPNJd9>

## Results:

- The amount of land used for animal feed globally varies depending on the type of animal feed and the source of information. However, according to a study published in the journal "Nature" in 2018, approximately 83% of the world's agricultural land is used for livestock production, either to grow feed crops or to provide pasture for grazing animals. This includes land used for grazing, as well as land used to grow crops such as corn, soybeans, and alfalfa that are used for animal feed.
- Another study published in the journal "Global Environmental Change" in 2020 estimated that around 77% of global agricultural land is dedicated to feeding livestock. This study used a more comprehensive approach, including both feed crops and grazing land, and also took into account indirect land use changes associated with feed production.
- It's worth noting that these estimates are subject to some degree of uncertainty and may vary depending on the data sources and methods used to make the calculations.

## I chose: REGENERATE

- It is difficult to provide an exact figure for how much land is used for animal feed globally as it can vary depending on various factors such as the type of animals being raised, the location, and the production methods used. However, it is estimated that approximately 33% of the world's arable land is used for growing animal feed.
- According to a report by the Food and Agriculture Organization (FAO) of the United Nations, around 80% of the world's soybean crop is used for animal feed, with the rest being used for human consumption, biofuels, and other purposes. Corn is another major animal feed crop, with around 40% of the world's corn production



being used for animal feed. Other crops commonly used for animal feed include wheat, barley, and sorghum.

- In addition to cropland, animal feed production can also impact other types of land such as forests and grasslands that are converted into pasture or used for growing feed crops. This can have significant environmental impacts such as deforestation, loss of biodiversity, and soil degradation.

I decided to do a Google comparison, I(KM) do not find the above that good, and I want something I can cite on the numbers. First, I Just Googled It -> 'How much land is used for animal feed globally?' with quotation marks.

See my result below, ... I did not go to Google Scholar but it is an option, Google did not like my construction but I am ok with it removing my quotation marks, check out the below,

I like the look of the third hit,

OurWorldinData. *'Half of the World's Habitable Land Is Used for Agriculture'*. Our World in Data, 4 Mar. 2023, <https://ourworldindata.org/global-land-for-agriculture>. I turned the web page into a PDF and captured this image from the web page:

I (KM) regard the three lower tiers as fabulously informative: the land distribution (37 million KM<sup>2</sup>) to support Livestock is 3.4 fold higher than Crops (11 million KM<sup>2</sup>) and delivers only 18% of our calories supply whereas Crops deliver 82%. WTH ... The global economy / population needs to end the Livestock game. I don't eat meat but if you do, check out the dynamics.

Reminder Anmol wrote: **I don't think everyone going on plant-based diets will help with the economy or crisis around the world.**

The data shared here indicates the cost distribution to Livestock / Animal Feed is significant and the resulting calorie value is low compared to a Plant-Based Diet Food Chain. Irrespective of health benefits and reduction of global warming Plant-Based Diets are economically sound.

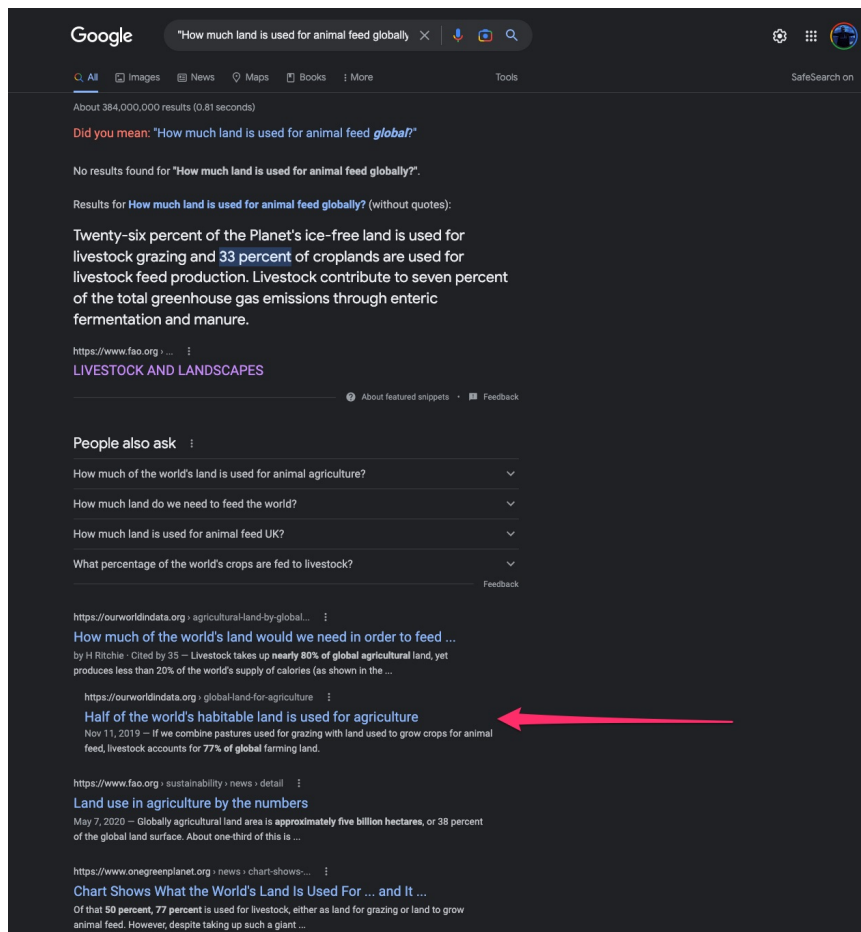


Figure 3: Land and Animal Feed

# Global land use for food production

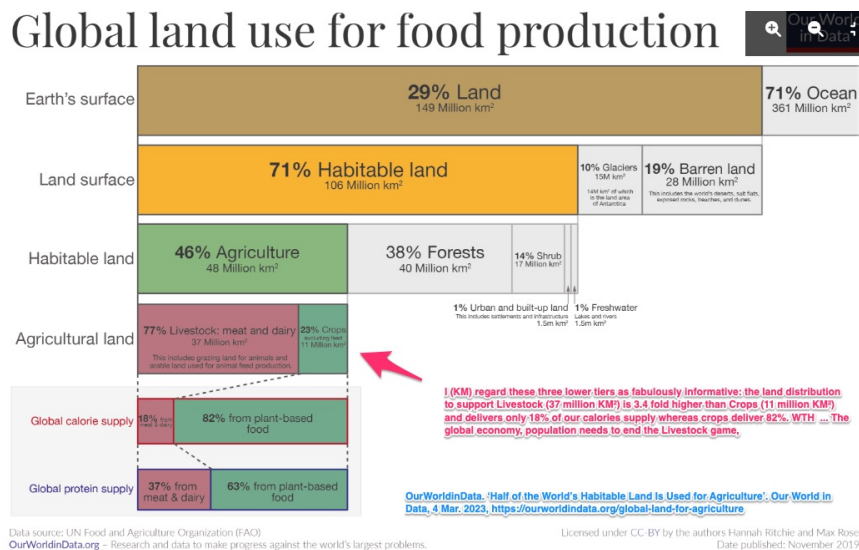


Figure 4: Land Use

## LET'S ALSO THINK ABOUT THE FUTURE OF AI> (LARGE) LANGUAGE MODELS> E.g., ChatGPT

Google's AI> Language Model is called 'Bard' and is arriving any-time now,

Google Brain is the powerhouse of their AI; Google products using it are

- Recommendations provided by YouTube
- Search functionality for Google Photos
- Android's Speech Recognition
- Google Translate
- Smart Reply on Gmail

I also think AI (Artificial Intelligence) is quite a bit of a stretch, a misnomer, ChatGPT is a Language Model: I have only explored text searches. I think I am getting back a curation of the known searchable texts, a sub-collection of knowns that have been recorded in a searchable text-based form. The collection of the knowns searched is vast; the generation of the retrieved sub-collection has limitations

based on the format: a searchable text-based form. It appears that ChatGPT can curate a response gleaned from recorded, searchable text-based forms. I have to research the 'curate' methodology, I think I am getting back pre-existing sentences and no sentences made de novo, the latter would be the intelligence step. Dear Class, I am highly recommending you explore querying ChatGPT and 'Bard' as soon as it is open to you. I am also recommending you give some thought to what might be the YouTube recommendation algorithm(s), and how it works. It's the best I have seen. My number 2 is Google Photos. Some of you are telling me, and each other, TikTok is better.

My thanks to you all,

Best wishes,

K Moses JD PhD

MosesK@StJohns.edu

<https://stjohns.digication.com/kmoses/home>

If you are sharing content for the courses via Google Docs, I am at [Docs.Moses@gmail.com](mailto:Docs.Moses@gmail.com) and GoogleVoice +13473526626,

I am available for office hours via Microsoft Teams at

<https://bit.ly/OfficeHoursWithKMoses>

... please alert me with an email if you need a specific time in the below window:

- Optional for you, all of you: Mon - Thurs 1230 to 1330 NYC - you are also welcome to use these time slots for any course content you want to be covered,

If you want to veer way off this reference point for office hours, email me and I will make adjustments for your time zone,

## **Supplement 2. Google search is pretty good, it has access to the EUA from the FDA,**

[https://www.google.com/search?q=baricitinib&rlz=1C5CHFA\\_enUS570US570&oq=baricitinib&aqs=chrome..69i57j35i39j0i67i650l2j0i512j0i67i650l4j0i512.4146j0j7&sourceid=chrome&ie=UTF-8#ip=1](https://www.google.com/search?q=baricitinib&rlz=1C5CHFA_enUS570US570&oq=baricitinib&aqs=chrome..69i57j35i39j0i67i650l2j0i512j0i67i650l4j0i512.4146j0j7&sourceid=chrome&ie=UTF-8#ip=1)

Baricitinib EUA Fact Sheet

Food and Drug Administration (.gov) <https://www.fda.gov/media/download>

“This EUA is for the unapproved use of baricitinib to treat COVID-19 in hospitalized pediatric patients 2 to less than 18 years of age requiring supplemental ...”

And try this in the Google Search: “FDA” AND “criteria” AND “baricitinib”

**Please see next page for a Google> Bard search,**

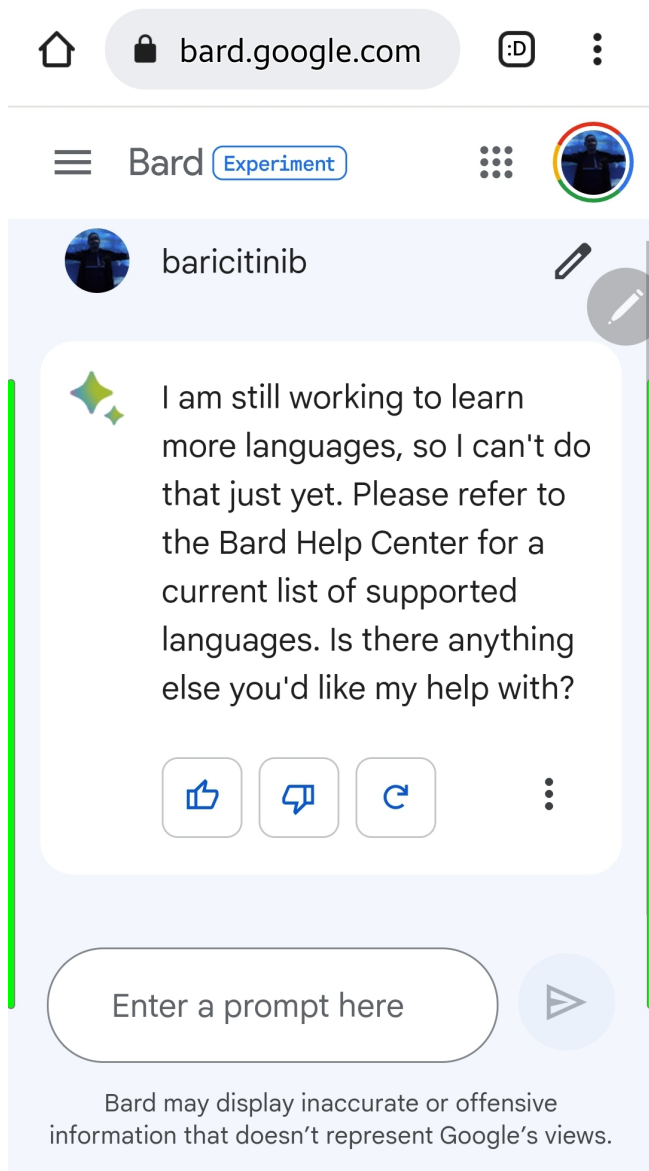


Figure 5: Supplement 2. Using an initial test run with Google> Bard, I asked for a return on the word '*baricitinib*'. 202303231502UTC



### Supplement 3. Updating my usage of Bard, 20230523231555UTC

It is 20230521231555UTC, the Semester is nearing its end, here are my reflections on using AI this Spring 2023 Semester, shared via CANVAS> Announcements> Note\_70

- *kmqNOTE*> In the *Spring 2023 Semester*, I promoted the use of AI to the members of a Prevention Research Course with, e.g., Moses, K. *'Designing> Assignment\_1d> Large Language Models and Imaginative Reasoning in the Classroom Space.'* 9 Feb. 2023, <https://zenodo.org/record/7811747> > get the latest PDF here: [https://zenodo.org/record/7811747/files/ChatGPTReasoning\\_202304091129UTC.pdf?download=1](https://zenodo.org/record/7811747/files/ChatGPTReasoning_202304091129UTC.pdf?download=1). In this example, I provided use cases of AI with the assignment question. My current interpretation after a teaching semester collaborating with AI as a research assistant is that it can bring us all forward. The proposal of AI as a research assistant comes from directly presenting assignment questions to AI, presenting subdivisions of the questions to AI, and relying on/promoting the course members to do the same.
- I suspect the challenges include filtering and fact-checking the AI work product despite my treating the source material AI is trained on as accurate. My default position is to trust the source material because thinking otherwise is being drawn into a dangerous conspiracy pit of distrust that is not the skepticism I advocate for in my teaching practice. The skepticism I promote distrusts the AI curating, stringing it all together into deliverables. The use cases I brought to the course members did not lead me to interpret AI as a *teacher*. I am asking the course members the same question: *is it a teacher?* I trust AI as a research assistant to which I bring my critical thinking. We likely think of critical thinkers as being '*smart and do[ing] things that intelligent and observant people would do[.]*' by Jordan Peele, speaking of the filmgoers for his film *"Get Out"* 2017, <https://perma.cc/T246-AG6R>. The core logic in science is testing our theories with new evidence, the very thing Mr Peele is speaking of. I argue that this is the scientific method.

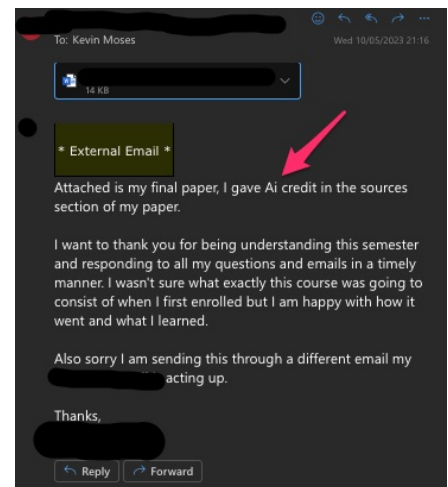


Figure 6: I hope

I am convinced AI is not doing this.

- It appears to me that AI is stringing together words/word chunks with no way to check if what is strung together is accurately strung together. Curating gathered information fragments and delivering the montage is limited by programming parameters, including the visions of the programmer. (Ref. Lee, Resnick, and Barton (2019), Bolukbasi et al. (2016)) I assure you the programmer is not Walter Benjamin. (Buck-Morss (1989)) My best estimate is the same old sequential decision tree is operating; “the because” includes examining the marketing: the said tree is not lauded as novel. The decision tree is faster via more efficient programming languages and hardware but that does not go to the veracity of the curation. The source material is treated and promoted as accurate by me but writing in the style of the sources does not mean that the curation will be accurate and trustworthy. Our course, *Prevention Research*, is going for the best estimate(s) on exposures and outcomes of interest to us; I also raised this example: Moses, K. ‘*Saving Lives, Speculative Writing on #theCoIncidence of #Asthma Hospitalizations and #COVID-19 Disease, ... Ongoing Reflections on Sars-CoV-2, A Compromised Immune System and Risk Assessment.*’ 11 Oct. 2020, <https://doi.org/10.5281/zenodo.4107131> > Look For the Latest Draft > 28th April 2023, 3.3MB: [https://zenodo.org/record/7876326/files/handout-IntroPreventionResearch\\_SpeculativeWriting\\_202304281634UTC.pdf?download=1](https://zenodo.org/record/7876326/files/handout-IntroPreventionResearch_SpeculativeWriting_202304281634UTC.pdf?download=1) ... Give it a try with AI as the collaborating research assistant, check if the AI can get to the best estimate on the *why question*. I am ending the Semester with a recommendation to use both:
  - **OpenAI** via <https://github.com/Significant-Gravitas/Auto-GPT>, I reached a use Limit for ChatGPT, error message: ‘API Rate Limit Reached’ I had to switch to a paid account, I interpret this as a loss for the Education space and using ChatGPT as a research assistant,
  - The *Google entry*> *Bard* via “bard-rs 1.0.6 - Docs.rs.” <https://docs.rs/crate/bard-rs/1.0.6>. ... I interpreted this as a beautiful rendering of AI. Built with *Rust*, I am a fan

of the programming language *Rust*. It is fast, often faster than C++ and Java; making *Rust* a good choice for high-performance applications,

*Analyses* are conducted with R version 4.2.2 with the `Hmisc` (5.1.0), `rUM` (1.0.2), `table1` (1.4.3) packages used to preprocess and summarize data. (R Core Team 2022; Harrell 2023; Balise et al. 2023; Rich 2023)

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