

Step 1: Prompt completion

I was looking to have ChatGPT answer the following question from our “Summary of Theories and Techniques of Change Assignment”:

"In this section, describe the problem(s) of plastic pollution. What is the nature of the problem, its scale, the main crux of the issue? How is it related to other problems, if at all? Is it just a symptom of another problem, or is it the manifestation of many other problems brought together? I expect you to correctly use the concept of wicked problems for this section. Note there is an optional reading by Rittle and Weber if you're having issues with the concept or really love it" (Liboiron, 2024).

My prompt history included:

1. Write five paragraphs about the nature of plastic pollution, including its scale. Reference the idea of wicked problems, a concept coined by Rittle and Weber (1972)
I changed this prompt because the answer didn't actually understand wicked problems properly
2. Write five paragraphs describing plastic pollution is a wicked problem, especially in terms of the scale of the problem and how it is always related to other issues in the economy, industry, and social realms
This was pretty good, but it really focused on the “economy, industry, and social realms” part and ignored the wicked problems and scale part
3. Rewrite, but with more emphasis on different scales at the local, national, and global level. Keep the concept of wicked problems
I will keep this one because it balances scale with wickedness
4. Give this essay a title
Done!

Evaluation

"Plastic Pollution Across Scales: Local Struggles, National Policies, and Global Solutions"
By GPT-4 (via OpenAI) and Wilma Filtstone, April 14, 2024.

Plastic pollution exemplifies a quintessential wicked problem, deeply intertwined with economic, industrial, and social realms across various scales – from local communities to the global stage.

The magnitude of this issue is staggering, with repercussions felt in the furthest reaches of the planet, from the smallest local streams to the vast expanse of the open sea. This complex web of cause and effect is intricately linked to our global economy, local livelihoods, and the very fabric of societies, underscoring the pervasive challenge of addressing plastic waste.

At the local level, the impact of plastic pollution manifests in tangible, often immediate, environmental and social consequences. Communities face the brunt of mismanaged waste, with plastic litter clogging waterways, exacerbating flood risks, and posing serious health hazards. Local economies, particularly those reliant on tourism or fishing, suffer as the beauty and biodiversity of natural landscapes are marred by plastic debris. The challenge at this scale involves mobilizing local governments and communities towards effective waste management solutions and fostering a culture of sustainability and responsibility towards plastic use and disposal.

Nationally, the issue of plastic pollution demands coordinated policy responses and infrastructure development. Countries grapple with the need to balance economic growth with environmental stewardship, often navigating the complex terrain of industrial lobbying, consumer behavior, and waste management capabilities. National strategies may include implementing bans on single-use plastics, setting recycling targets, and promoting alternative materials, yet these efforts must contend with existing economic systems and industrial processes deeply reliant on plastic. The national scale highlights the complexity of enacting widespread change within entrenched economic and political frameworks.

Globally, plastic pollution underscores the interconnectedness of the world's economies and ecosystems. The transboundary nature of plastic waste, with rivers and oceans carrying debris far from its source, necessitates international collaboration to address its root causes and manage its impacts. Global scale solutions involve intricate negotiations, international agreements, and the harmonization of standards for production, use, and disposal of plastics. This level of the problem showcases the daunting task of aligning diverse stakeholder interests across different regions, cultures, and levels of economic development.

Addressing the wicked problem of plastic pollution thus requires a multi-scalar approach, recognizing that solutions need to be tailored to the specific challenges and opportunities at the local, national, and global levels. Each scale offers unique leverage points for intervention but also presents distinct challenges. From fostering local community initiatives and national policy reforms to promoting global cooperation, the fight against plastic pollution demands an integrated strategy that bridges geographic and societal divides. This comprehensive approach underlines the necessity for a concerted effort that combines innovation, policy, education, and community engagement to tackle the multifaceted dimensions of this wicked problem.

Analysis of Evaluation:

Most of the red highlights are because ChatGPT subscribes to many of the “mythological” theories of change we cover in this course. There is a toxic positivity (Wikipedia, 2024) to the theories of change and a dedication to the status quo, indicating an underlying model of justice that privileges development over nature, human rights, or Indigenous Sovereignty (Liboiron et al., 2023). While the red highlights might be popular ideas and sometimes even work, they belie both more robust theories of change and the core idea that wicked problems are not solvable (Rittle and Weber, 1973). In other words, they would be incorrect in this course given our course content. Since this course does a lot of myth-busting around theories of change and ChatGPT, as I understand it, uses the Internet and other public sources to write, I do not think ChatGPT could ever quite get the theories of change part of our course right, no matter how many prompts I gave it. I would have to restrict its sources too much.

However, some of the ideas are usable (light green) if I combine them with course material, and some parts are nicely written and I can use them in my work (dark green).

The yellow highlights are mainly ideas that might be true, but rub up wrong against the ideas of wicked problems. I also highlighted areas in yellow that used universalism to talk about issues when those problems are not universal, which can lead to issues of scalar mismatch (Liboiron, 2014), where a solution and a problem do not address the same thing. For example, if we based our environmental interventions on waterways to make sure they weren't clogged here, we would spend a lot of time on the millions of rivers and streams here but neglect things like fishing line, which is much more of a problem (Bilkovic et al., 2014).

Step 3: Quoting, attributing, and citing

Define the problem of plastic pollution:

Plastic pollution is a classic wicked problem, “an inextricable mix of social, economic, and environmental systems. Efforts to solve these problems will involve identifying a range of interconnected elements and examining how they are related” (Aranda et al., 2012: 1). As such, defining a wicked problem like plastic pollution is a high-stakes project, as how a wicked problem “is defined simultaneously defines solutions to that problem—some solutions will seem feasible and desirable, while others are left unconsidered” (ibid). Thus... [redacted since assignment is currently active]

References

- Aranda, Rachel , Tatiana Baez, Carolyn Balk, Jody Borhani, Erin Brophy, Kevin Chen, Sofia Davis-Fogel, Soldely Dilone, Jiro Egawa, Nell Kucich, Max Liboiron, Chelsea McCaw, Melissa McIntyre, Saudy Melo, Alex Morency, Parth Patel, Robert Raymond, Kayla Santosuosso, Mishka Stueber, Sarah Thacher, Jessica Vu, Jackie Widmann. *Best Practices of Defining Wicked Problems*. Pamphlet: New York University.
- Bilkovic, D.M., Havens, K., Stanhope, D., and Angstadt, K. (2014). Derelict fishing gear in Chesapeake Bay, Virginia: Spatial patterns and implications for marine fauna. *Mar. Pollut. Bull.* 80, 114–123. [10.1016/j.marpolbul.2014.01.034](https://doi.org/10.1016/j.marpolbul.2014.01.034).
- Open-AI and Wilma Filtson. (2024). Plastic Pollution Across Scales: Local Struggles, National Policies, and Global Solutions. ChatGPT. April 14. <https://chat.chatbotapp.ai/chats/-NvRjoczKvSPCb7tGT4b?model=gpt-4>
- Liboiron, Max. (2014). "Solutions to waste and the problem of scalar mismatches." *Discard Studies*. <https://discardstudies.com/2014/02/10/solutions-to-waste-and-the-problem-of-scalar-mismatches/>
- Liboiron, Max. (2024). "Summary of theories and techniques of change (required)," Assignment, BIOL/SOCI277MMA24, Mary Baldwin University.
- Liboiron, Max, Liu, Ruit, Earles, Eli, Walker-Franklin, Imari. (2023). Models of justice evoked in published scientific studies of plastic pollution. *FACETS* 8, 1–34. <https://doi.org/10.1139/facets-2022-0108>
- Rittel, Horst WJ, and Melvin M. Webber. (1972). "Dilemmas in a general theory of planning." *Policy sciences* 4.2: 155-169.
- Wikipedia. (2014). “Toxic positivity.” Last updated April 7, 2024. <https://en.wikipedia.org/wiki/> Accessed April 14, 2024.