

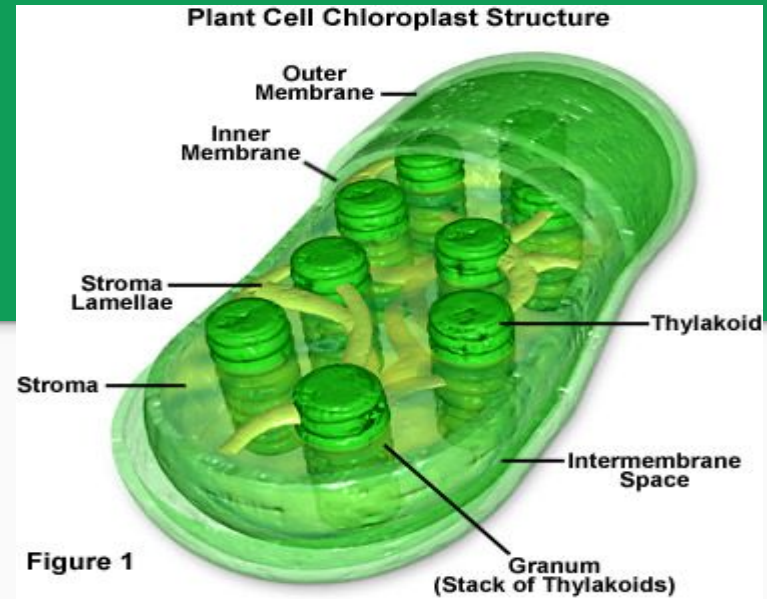
The HUMAN Autotroph Project

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Chloroplast to give you a blast

The concept for (this speculative technology) is to bioengineer a type of plant that would grow into and take root into a person, producing oxygen and absorbing CO_2 while also providing the wearer with the nutrients gained during the photosynthesis. Our product offers three variations for different levels of customer comfortability and intensity of plant human hybridity. One design is a wearable hat planter, a patch, and a seed to take root. Our Product hacks the equation of photosynthesis and cellular respiration.



- photosynthesis is $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{energy} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$. respiration is $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{energy}$.
- The inputs of one are the outputs of the other.
- By connecting the two we could create a tool that reframes the human and plant as codependent.

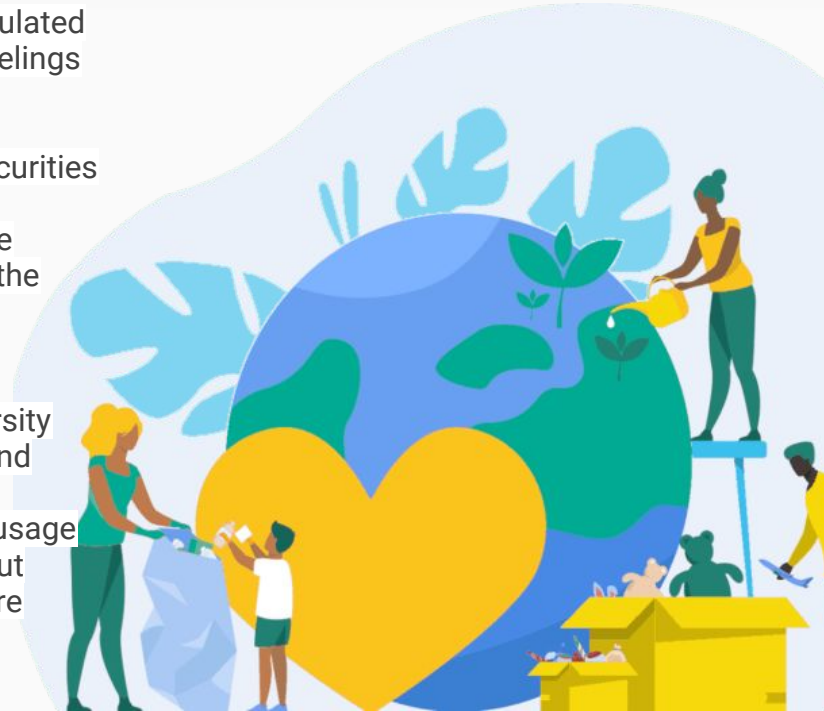


What is your issue? Who is it a problem for or why is it a problem?

Our product tackles many impending problems: food scarcity on an overpopulated planet, inefficient/inadequate industrial agricultural methods, obesity, and feelings of separation from nature.

Currently with a population of 8 billion people we are experiencing food insecurities globally. In an article written by the UN they state, "The world's population is expected to increase by nearly 2 billion persons in the next 30 years, from the current 8 billion to 9.7 billion in 2050 and could peak at nearly 10.4 billion in the mid-2080s." <https://www.un.org/en/global-issues/population>

Industrial Agriculture is among the leading causes of anthropogenic climate change. It is the leading cause of deforestation, water pollution, and biodiversity loss. Large scale farming operations are driven by profit; they often exploit and abuse animals, destroy natural habitats, generate pollution, and contribute greenhouse gasses. Big ag is resource intensive, and inefficient in its water usage to begin with. As consumers we are wasteful and much produce is thrown out anyways. By uniting photosynthesis and respiration into one organism we are cutting out agriculture intermediaries in the supply chain. <https://thehumaneleague.org/article/industrial-agriculture>



Human health problems

In the US obesity, food deserts, and processed foods, are major drivers for chronic diseases, diabetes, hypertension, cardiovascular disease and cancer. These problems disproportionately affect impoverished and minority communities. Fanzo of bloomberg magazine writes, "Nearly a third of the world's population is overweight or obese. By 2030, nearly half will be." Food systems contribute to these crisis. Manufactures prioritizes cheap, good tasting food thanks to salt, fats, and sugars. These foods often become more easily accessible while healthy food is harder and more expensive to find.

<https://magazine.jhsph.edu/2020/inequity-food-systems-drives-both-hunger-and-obesity>

Connecting people with plants will heal feelings of separation from nature that result in depression. By making the plant and human codependent of one another our product fosters a relationship of care, and mutual benefit



What are some of the social or cultural factors that shape this issue or problem? Why is this issue significant?

The issue comes from neo-liberalism or capitalism. Putting importance on more productions and consumptions benefit big corporate agriculture. This issue is significant because the more we think and act as if we are separate from other worlds and not part of other worlds, the more natural resources like water or air will be polluted. After all, we keep buying and consuming things that are not good for the environment.



How does your tool address this issue or problem? How does your tool reframe this issue?

This tool addresses humans' one sided and exploitative relationship with nature as a whole and allows humanity to more directly bear the responsibility of fixing the problem of climate change by taking an active role in reducing its effects. By putting people in a position where they are in a symbiotic relationship with plant life they are put into a position where taking care of this plant is no different than taking care of themselves. This symbiotic relationship reframes our relationship with nature to being one of cooperation instead of exploitation. Something that this tool touches on collapsing the idea of separation, both between humans and nature and between one another. The shared experience of being symbiotically connected to plants would create new types of communities united under the shared goal of healing the planet and ourselves at the same time.

