Redesigning On-line Food Consumption To Enhance Racial And Social Inclusion Through Generative Production Networks

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REDESIGNING ON-LINE FOOD CONSUMPTION TO ENHANCE RACIAL AND SOCIAL INCLUSION THROUGH GENERATIVE PRODUCTION NETWORKS

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Abstract. The food system in the US has supported growing dominance of industrial agriculture, corporate distribution chains, and other means by which power is exerted at the expense of environmental sustainability, citizen health and wealth inequality. Economic impacts have been most damaging to low resourced and racialized communities. Online purchasing creates new opportunities--particularly in the context of the covid epidemic--but barriers may arise that are also along race and class divisions. This paper examines an initial data set for two Black led collaborative Food System projects (two urban farms and a mobile farmers market initiative), all of which are primarily staffed by African American leadership and serve a diverse set of community members with Black consumers being of the majority. While issues such as government benefit payments constitute formal economic barriers, other challenges are better illuminated through the lens of the extraction of value: the loss of community connections and increased dependency on modes of production that do not return value to the community. We define "generative production networks" as those which maximize unalienated value return rather than value extraction. We utilize this framework to examine alternative online systems to overcome these barriers.

1. Introduction

The food system in the US has supported growing dominance of industrial agriculture, corporate distribution chains, and other means by which power is exerted at the expense of racialized environmental sustainability, citizen health and wealth inequality (Garth & Reese, 2020). Online purchasing creates new opportunities--particularly in the context of the covid epidemic--but barriers may arise that are also along race and class divisions (Dillahunt *et al*., 2019). This paper examines an initial data set for two Black led collaborative Food System projects: a pair of urban farms in Detroit, and a mobile farmers market initiative in nearby Lansing MI. Both the farms and the mobile market are primarily staffed by African American leadership and serve a diverse set of community members, with Black consumers being of the majority. We conducted research on both producers and consumers, and developed an online marketing system that incorporates this information. But the system was also designed for a broader set of concerns. Low-income communities suffer the legacies of colonial domination, from land appropriation to slavery, as well as later systems of exploitation. Many of the deeper challenges can be illuminated through the lens of the extraction of value: the loss of community connections and increased dependency on modes of

production that do not return value to the community. Is it possible to restore those functions lost to an extractive economy? To develop a system that does return value, and to do so without the alienation and extraction that modern food systems exemplify?

We define "generative production networks" as those which maximize unalienated value creation, and maximize its circulation back to producers. In doing so the networks must minimize value extraction, despite being located in a society dedicated to exactly that. We focus on three forms of value: ecological, labor, and social. For example, extraction of ecological value occurs when farming shifts from traditional agroecology to industrial farms that deplete soil of its nutrients and life-sustaining microbial ecosystem (Altieri *et al.*, 2017). Extraction of labor value occurs when a worker is moved from enriching mastery of their craft--doing work you love--to an assembly line where they don't even know what product is being made (Sennett 2008). And an example of the extraction of social value is the way that our cultures, communications and lifeways are colonized by social media corporations (Zuboff, 2015).

Below we review some of the literature that illuminates this distinction between extractive and unalienated value, and its relevance to food justice. Following that we describe our field sites and methods for data collection. Our data indicates that if we are to develop a system that includes unalienated consumption, it needs to allow for more thoughtful and socialized interactions during the online purchasing experience. Thus the system we propose will create a virtual communal space for developing both individual and collective activities, experiences and decisions regarding food understanding and purchases. By linking these more thoughtful approaches to consumption, and creating links to less alienated forms of production in Detroit"s urban farms, we hope to facilitate a general set of strategies for moving society from an extractive economy to one that enjoys the decolonizing benefits of generative production networks.

2. Literature review

a. Generative Justice

The literature on generative justice (GJ) frames the problems of inequality, racism, environmental damage and health damage in similar ways. All of these, according to Eglash (2016) are the result of economies of extraction. As value is extracted from the land, environmental damage occurs. As value is extracted from labor, wealth inequality and alienation from ourselves occurs. As value is extracted from society, our social networks are colonized in ways we hardly notice: online social media are essentially "attention farms" for corporations. The GJ literature contrasts this system of extraction with Indigenious cultures: "Many African societies had indigenous traditions in which economic, ecological and creative capital was generated and circulated in a bottom-up fashion, offering a more egalitarian and sustainable approach than either the capitalist or socialist traditions of today" (Eglash, 2015).

Much of the literature on GJ examines how to restore Indigenous traditions, or hybridize contemporary contexts and technologies with inspiration from these unalienated practices. Kuhn (2016) for example provides an analysis of GJ in fiber arts. She surveys the original Indigenous system of Navajo weaving, where sheep created biodiversity in plants, plants were used in dyes, and dyed blankets created value that supported sheep. And she examines contemporary attempts to recover that kind of

circular economy: for example the use of invasive plant fibers in crafting baskets in Africa, which reduces the plants and provides income.

In his PhD thesis STS scholar Dan Lyles examines the intersections between GJ and food production systems. He characterized the problems as "sticking points" in attempting to create localized circular economies for food. Either the participants rooted themselves entirely in an Indigenous-oriented farming system (his example was the famous Soul Fire farm in Albany NY), or they only achieved a quasi-generative status, as unalienated value would tend to "leak" or become extracted. For example, engaging youth in urban farming can be beneficial, but if not done in an authentic way--merely to trick them into some science lessons--the value is being extracted.

To summarize the above in simpler terms: "unalienated value" means "keepin' it real" or being authentic. If you are a musician or cook or farmer, and you are doing work you love, that is unalienated labor value: enjoyable, fulfilling, enriching for your sense of self. If you are soil, and farmers are putting in compost full of nutrients and microorganisms, that is unalienated ecological value, the stuff that is enriching for the soil. And if you are a social group, and you gather around the table to cook and share and eat, that is unalienated social value, enriching for the communal soul. Of course there is no guarantee that any particular event will actually embody those qualities: any of those scenarios can be faked, commodified, manipulated; or simply romanticized to cover up forms of social inequality. But at least we can start with an understanding of what "unalienated" should be when it is working well. And that aspirational lens helps us spot what Lyles calls "sticking points" where value is appropriated, extracted or leaked away from those who created it.

b. Food Justice

"The struggle for food justice has to be tied to the struggle for economic justice" – Malik Yakini, (Perkins, 2017).

As noted above, generative justice depends on the circulation of unalienated value, and is inspired by Indigenous traditions. In the domain of food justice, similar themes emerge, especially in the intersection of racial justice activism and food systems critique. For example in Black Food Matters: Racial Justice in the Wake of Food Justice (Garth & Reese, 2021), the anthology authors note that traditional Black food culture-- originally in the African Indigenous context--often created mutual forms of support for bodies, practices and communities. Today Black communities still struggle to reclaim that heritage (p. 111). Heritage foods can also provide hints about erased pasts and pathways that linked both voluntary and involuntary travel, and "survivance" in the sense that Native American scholars have used the term (Vizenor, 1999). For example, cooked greens are nutritionally dense; the opposite of "empty calories" from junk food. Tracing this vital form of sustenance can help identify links between diaspora groups: Muriwo (Zimbabwe), Morogo (Botswana), Sukuma (Kenya); Calloo (Carribean); and Collard greens (African American) are all cooked greens with varying amounts of species resemblance, reflecting the intersections of ecology, culture and histories of survivance. Other foods shared across the diaspora include red rice, pepper pot, barbeque, and peanut soup.

Part of this struggle to recover unalienated forms of food production and consumption has to do with the narratives that attach to the foods. Garth and Reese (2020, p. 193) point out that while the foods of other cultures are often positively linked to their roots, some Black food is not: watermelon and chicken have been stigmatized as

food of enslavement, stereotypes and traps of the past, despite the fact that one is a healthy fruit and the other (when skinless) a low fat protein source. Resisting the pull of an extractive economy that wants to trade our money for our health, while simultaneously reclaiming that past is a struggle that is as much about bodily integrity as it is heritage integrity.

Alkon and Agyeman (2011) examine food justice as a social movement, contrasting the largely white environmental movement of the 1970s with the environmental justice movement of the late 1970s. A defining moment in this formation occurred in the social call from the 1982 Warren County protests against the siting of a toxic landfill for PCB's in a largely African American county in North Carolina; such events spurred others to see the links explicitly to issues of racism and poverty (Bullard, 1983). The food justice movement grew out of the environmental justice movement in the mid 1990s. Taylor (2000) notes that these are not necessarily sequential: even when we look at 1960s movements around ending the Vietnam War, eliminating racially-based housing and education discrimination and more, there were ties between health and the environment. Agyeman (2021) summarizes the history of urban planning and housing policy that helped create „food apartheid" in US cities.

In her work Farming while Black (from the same Soul Fire Farms described in Lyles 2016), Leah Penniman puts many of these ties together in a single statement:

> Racism is built into the DNA of the US food system. Beginning with the genocidal land theft from Indigenous people, continuing with the kidnapping of our ancestors from the shores of West Africa for forced agricultural labor, morphing into convict leasing, expanding to the migrant guestworker program, and maturing into its current state where farm management is among the whitest professions, farm labor is predominantly Brown and exploited, and people of color disproportionately live in food apartheid neighborhoods and suffer from diet-related illness, this system is built on stolen land and stolen labor, and needs a redesign (2018,5).

In other words, systems of extraction are not limited to pulling labor value from workers or soil value from nature. They are also powered by mechanisms for systemic racism. If you want to extract value, colonialism and slavery are powerful starting points, and the continuation of surplus labor pools and conveniently configured consumers can be maintained through systemic racism, from targeted marketing to redlining. Here we can see the relationship between the GJ framework and the ties that food justice critiques apply to US and colonial history.

Not all food movements are based in social justice foundations. Williams (2013) writes a history of "the good food movement" starting with Julia Child's French cookbook in 1961. The good food movement was really just a popularization of haute cuisine for the masses. It was not until much later that it adopted the needs of food security efforts and emerged from collaborations between academics and activities interested in understanding the global and local dimensions of food systems and issues of access (Gottlieb & Joshi 2010, xvii). Yet history has revealed that co-optation is a two-way street. The term "organic" once signified a radical stance; now it is commonly used as advertising all sorts of dubious products (Giannakas, 2002). There are fragmented approaches to equity resulting in varied definitions and applications of Food

Justice. What Food Justice does share with us is the growing needs of a global and local approach to the eradication of all systems of oppression.

c. Online consumption

The literature on online consumption varies across a broad range of ideologies. For example, early works such as Kiang et al describe in glowing terms the wonderful possibilities for "product customization, availability, logistics, and transaction complexity". However as the damaging effects of extractive economies were amplified by electronic accessibility, scholars increasingly documented the negative impact of online consumption.

The shift to online purchasing is just one element in the larger context of systems of food economies. As physical structures and transportation systems shift, race-based and income-based privilege is both amplified and made more invisible. One impact has been the loss of grocery stores in city areas where racialized populations are most concentrated. Grocery stores in the sense of large supermarkets, with extensive availability of reasonably priced fresh fruits and vegetables, are the major source of healthy food for most of the US (Horowitz *et al.,* 2004). Since inner-city families have to purchase more food at small convenience stores, where fresh food is rarely available, of lower quality, and typically over-priced, the higher risks of obesity, diabetes, and other health problems related to diet for racialized populations are directly linked to this lack of appropriate fresh food markets (Clifton, 2004). A 2005 Detroit study found that in poor neighborhoods with a high percentage of Black residents, trips to the supermarket averaged 1.1 miles further than poor neighborhoods with a small Black demographic.

Taylor (2019) notes that the attempt to summarize these phenomena in ecological terms („food deserts" or "food swamps") may be done with good intentions, but it can backfire if they are unconsciously naturalizing what is clearly a social process of racialized oppression. It is no different, in her view, than derogatory terms such as "the savage inner city". Similar analysis is provided in de Masters and Daniels (2019), who note that "food desert maps" often make the community assets that do exist invisible. Thus food deprivation, even in cases where it is addressed as a need, may be weaponized as a means to discredit Black communities as locations worthy of development and self-directed agency.

Giere and Kumanikay (2008) tie racialized food consumption to targeted marketing practices--including but not exclusive to online--centered on selling high-calorie, high-processed, low-nutrition foods and beverages to BIPOC (Black, Indigenous, and other People of Color) populations. These clearly contribute to ethnic disparities in obesity and other diet-related chronic conditions. They note a feedback loop in which excess consumption of food discourages physical activity, which then may contribute to behaviors and environments that predispose people to gain weight.

Studies of value, attitude and norms towards online shopping often emphasize consumers seeking bargains. McFarlane (2013) summarize their data as showing that "customers choose products that offer the best-perceived value, and price is a critical element that influences customers" value perceptions". According to Lien, Wen and Wu (2011) "value represents a trade-off between give and get components in a sale transaction". They identified the reputation of the product--in particular brand--as a major element in the decision-making process that balances perceived value against monetary price. In their study of online grocery services for underrepresented groups,

Dillahunt et al. (2019, p.1) note that "because online grocery delivery services provide access to a wider variety of food and do so digitally, technical interventions may be necessary to bridge the gap between perceptions of food access and healthy-food intake".

In their system-wide analysis of online food purchasing, Khandpur et al. (2020, p. 11) note that whatever the contributions that online markets can make to equity, one would need to take into account the federal Supplemental Nutrition Assistance Program (SNAP), and the Electronic benefit transfer (EBT) by which those benefits they are delivered: "the acceptance of SNAP benefits for online food purchases would first require a favorable state-level policy context (e.g., states need approval for use of EBT test cards), before retailer policies can be implemented." While such barriers are certainly central issues to address, we cannot afford the illusion that there is a simple fix that a few tweaks to the system will address. Anti-Black sentiments of overt bigotry, the structural racism that threatens diets with a lack of affordable fresh food, the seduction of fast food, and other profit-driven deprivations make interventions like online food access important opportunities for creating alternative systems.

3.   Merging Generative Justice, Food Justice, and Online consumption

The Combehee River Collective"s Black feminist statement, which remains one of the most fundamental assertions for emancipatory practice (Eisenstein, 1978) defined their stance as one "actively committed to struggling against racial, sexual, heterosexual, and class oppression and… the development of integrated analysis and practice based upon the fact that the major systems of oppression are interlocking" (Combahee River Collective, 1977). As a design imperative, that means refashioning modern technosocial ecosystems through an anti-racist, democratizing, and empowering framework. As we can see from the literature review, economies based on the circulation of unalienated value--ecologically and physiolgically sustainable, rewarding and dignified labor, and egalitarian social relations--are possible. They were well established in Indigenous societies of the past, and the potential for recovering them exists in our present. But the means for that recovery, if it is to exist in the modern context, will have to contend with modern technology. Can we link unalienated forms of production, such as the Blacked owned urban farms of Detroit, with unalienated forms of consumption, as we see in the Black food justice movement? Can an online system be designed that facilitates this value flow? That is our central research question. We investigated two sites, one on the consumption side, and one on the production site. Using that data,we then began experiments with online systems, with the goal of restoring some of the values and functionalities that had been lost to our extractive economy.

4.   Chronological description of research at the two Detroit farms

In this section we review the first of two research sites, a pair of collaborative, community-driven urban farms in Detroit. As is often the case with community-based design research (Bang *et al*., 2016), the site communities themselves influence the selection of multiple data collection methods, in order to ensure that the priorities of the participants are fore-fronted.

a. D-Town and Oakland Avenue Urban Farms

The Black agrarian scene located within the city of Detroit has been expanding since its origins in the 1980s, and D-Town Farm and Oakland Avenue Urban Farm are two of the most prominent sites in that history (Tyler, 2019). Farming in Detroit resonates with the flow of the many musical sounds that have been created there such as motown, soul, funk, and techno music. Here we find growing, harvesting, educating, and sharing practices that are both recovered from Black heritage, and reinvented for the future in ways that reflect the goals of self-determination, cultural survivance and other aspects of generative justice.

Oakland Avenue Urban Farm"s origin dates to 2009. It began with Jerry Hebron, the executive director who is often seen working in the 4-acre field with her husband (who is the farm manager). Jerry speaks often of why she came back to live in the north end. Her mother, Pastor Reverend Elder Betha L. Carter challenged her congregation to address the neighborhood"s need for food security. So Jerry left her real estate job to run her family"s business and created Oakland Avenue Urban farm from a 4-acre lot and a building. Current plans include The Landing, an event space with a 12-room hostel which will give visitors to detroit an urban agricultural experience.

This "agri-cultural" urban landscape is located in Detroit's North end. It is a program of the North End Christian Community Development Corporation, which is a non-profit, community-based organization dedicated to cultivating healthy foods, sustainable economies and active cultural environments. The North end of Detroit is well known for the richness of its soil. As of 2016 the nonprofit Keep Growing Detroit had carried out 1,343 soil samples in the area, and found about 81% had acceptably low levels of lead (Ignaczak, 2016). They grow organic foods and offer their own line of products such as AfroJam Jams & Jellies, Sweet Sticky Thing Honey, and Bissap Hibiscus Cooler, as well as the usual farm produce such as fresh eggs. Oakland Avenue Urban farm has a 10 person staff and operates with over 300 hundred volunteers annually.

D-Town Farm"s origin begins in 2000 when Malik Yakini, principal of Nsoroma Institute Public School Academy charter school, worked with staff, parents and supporters to implement organic gardening as part of their Afrocentric curriculum. D-Town grew from that effort, alongside other activist groups seeking healthy and sustainable food for city of Detroit residents. The 7-acre organic farm is located within Rouge park, run by the city of Detroit. There are over 30 different fruits, vegetables and herbs that are sold at farmers" markets and to wholesale customers. The farm features four hoop houses for extended-season growing, a solar tower, and facilities for bee-keeping, rainwater retention, large-scale composting, farm tours and an annual harvest festival. The farm also maintains a children's area with a small playscape and a clay pizza oven. Community building is an important part of the farm's mission.

In addition to bringing crops to local farmers" markets, they educate youth about healthy eating and exercise through their Food Warriors Development Program. They will be breaking ground in summer 2021 for a Food Coop run by the city of Detroit. Their parent organization, The Detroit Black Food Security Network, helped to establish Detroit Food Policy Council, a group committed to establishing and maintaining a localized food system and ensuring food security in the city.

As we detail below, the data collection and design process eventually evolved into the online website, Shop Detroit Farms. This collaborative network of Detroit growers and producers is aimed to provide food that is environmentally and socially

just. But it is also one that is conscious of the ways that generic, universal forms of social justice must be accompanied by processes and practices specifically designed for the needs of the local Detroit population (over 90% Black). The organizations represented by Shop Detroit Farms take great pride in their ability to offer nutritious options for their local community. The broader aspirations we often heard from the leadership in these organizations can be summarized as uplift and celebrate Black leadership, Black self-determination, and Black joy.

COVID 19 has impacted agriculture practices and the way both farms connect with their consumer demands for safe food delivery. The creation of an online marketplace thus took on special significance in this context; but we never lost sight of the goal to support Detroit farmers who are rooted in racial justice, community self-determination and sustainable, regenerative practices. Oakland Avenue Farm and D-Town Farm have developed over the years through mutually supportive mechanisms, and thus combining their public-facing online access does not create problems over competition. What follows in the next two sections are first-person narratives by the first author (Johnson), to help capture the experiential aspects of that part of the research.

b. From two farms to many: Shop Detroit Farms (first person narrative by Johnson)

In May 2020, I began working with them through an internship offered by the University of Michigan Sustainable Food Systems Initiative. The goal of the internship was to work five days between three farms: D-Town Urban farm, Oakland Avenue Urban farms, and the University of Michigan farm where I was already employed as the Diversity, Equity, and Inclusion Manager. Due to the nature of COVID and its effects upon food production for growers during the summer, the nature of the internship changed dramatically. I was now the intern that would explore and implement an online ordering system as a partnership between D-Town and Oakland Avenue Farm. Both farms operate within a cooperative structure and are close siblings in their fight for food access within the Detroit community.

In June of 2020, I began conducting a feasibility study of existing Direct Marketing systems using the National Young Farmers Association guide as a starting point. The goal of the feasibility study was to find the best system for each of the two farms. In July, the feasibility concluded.

The findings from the feasibility study revealed potential challenges: many of the sites required credit cards; did not accept EBT or SNAP (common federal food supplement funding for low-income communities); were not designed for people with disabilities; assumed laptop or tablet rather than smartphone; and did not put any emphasis on purchasing from local sources or for healthy diets. This was echoed by other researchers; for example Dillahunt et al. (2019) note that users for current online shopping technology are typically highly educated, affluent, and technically adept, and raise the concern that its design may be influenced by that user base. I shared with my community partners that many of the current online ordering systems may not fit the needs of the community we are serving.

In addition to the equity and access questions for consumers, the online ordering systems also appeared to lack any means for facilitating the communal connections that Black farmers utilize within their farm practices: seed and equipment sharing, harvesting collaborations, and educational exchanges. The more I learned about the day-

to-day practices of these farms, the greater the gap appeared between existing online systems and these flows of unalienated value. It seemed like an online system that could serve the entire community that formed around the urban farms would be vastly different from those I was finding online.

5. Chronological description of research at the food cooperative (continuing first person narrative by Johnson)

Following the summer internship with the urban farms, in fall of 2020 I was approached to help create another online food system. This would be an online grocery delivery pilot for senior communities. It would be run by a non profit called North West Initiative (NWI), looking to strengthen the Lansing city area bounded by the Grand River on the north, east, and south. With only an hour or so drive or so between Lansing and Detroit, it is no surprise that food justice networks in the two municipalities are in communication with each other.

The pilot project was created to address the problem of low-income food access in Lansing‟s urban core, and it obtained new significance during the COVID 19 pandemic, especially for senior citizens who utilize the EBT (Bridge) card to purchase their groceries. The only stores in the Lansing area who began accepting online grocery ordering for those with an EBT card were two grocery outlets (Walmart and Kroger), and the lack of delivery, plus long distance (5-7 miles from the center of downtown Lansing) made food access very difficult for our most vulnerable populations during the pandemic. The Capital Area Transportation Authority also shut down during this time, which left people without an inexpensive public transportation option. Since the summer of 2019, NWI has been surveying low-income residents to get their input on food access barriers, and the responses since the pandemic have been alarming: seniors too afraid to go to the store or even to free food distribution program sites.

Mid-fall I started gathering data on existing grocery shopping and delivery services (GSDS), such as Shipt, Instacart, and Go-Go Grandparents to find out their rates and how their programs operated, as well as sharing information about this unique population of EBT users. But Shipt and Instacart were not interested and Go-Go Grandparents charged a very high fee for their service. Their responses were not surprising: they had been inundated just trying to fulfill the orders of the thousands of people who had credit cards and who were placing online orders during the height of the pandemic. The NWI goal would be to pilot a grocery shopping and delivery service for low-income seniors. This would help to determine if it can transform into a viable and affordable alternative, ensuring that our most vulnerable populations can also equally participate with the online grocery shopping and delivery service platforms during the pandemic and beyond. And as broader long-term goals, they saw the possibility of paths for food equity and food justice for all the low-income people who live in the six "food apartheid" neighborhoods they identified in Lansing, MI.

6. Summary of data sets and methods

Our methods for gathering data included online surveys, in-person interviews, rapid prototyping, a wall board, and a focus group. These were conducted separately for the two case studies, as detailed below.

a. Data gathering for agricultural production in Detroit

Both farms (D-town and Oakland Ave Urban Farm) partnered with us to facilitate the following data collection:

- Document collaborations: these were bi-weekly meetings in which we facilitated ideation, structure and crafting of two documents
  - Sustainable agreements
  - Partnership documentation
- Process mapping: inventory of systems to map production and labor process, customer service, infrastructure management, and other fundamentals
- Participant observation: walk-through with producers/customers in the process of ordering in the system and picking up at both farms.
- Rapid prototyping: using rapid iterative testing and evaluations (RITE) a initial GUI for the online shopping system was created, and users provided feedback that allowed for a gradual evolution towards greater utility, capability and satisfaction.
- Survey: a survey was sent to 265 prospective users from the online system created by D-town farm; 60 responded (appendix A).
- Focus group: yet to be conducted, this will allow remote moderated research (remotely observing users completing tasks on their own devices in context.

b. Data gathering for Northwest Initiative

Fall 2020 marked the start of the design of the NWI grocery delivery pilot. These methods included:

- Positionality wheel: this was a workshop based on (Noel & Paiva, 2021) in which participants share the aspects of their identities (ethnicity, gender, language, labor etc.) they feel might be relevant for others to know.
- Table of collaboration: using Creative Reaction Lab (Creative Reaction Lab, 2018), we developed a table of stakeholders and potential outside contributors
- Initial Surveys: In appendix B we show the survey we developed to determine user needs and experiences around food consumption on and off line. The respondents were selected by using locations along a Lansing MI mobile food truck route. Since the food truck is known for accepting SNAP and EBT payments, this allowed us to focus on low-income and Black community members. 18 respondents from 3 apartment buildings spread across the Lansing mobile food truck route filled out paper-based forms. In addition, a similar set of questions were mounted on poster boards in one building lobby; an additional 26 respondents filled out these forms. Of the 44 total respondents, the demographics were as follows: 60% were white and 40% minorities, there were more women coming to the market (80%) then men. The average income is below $25,000 and are dedicated EBT users.
- Food Chats: following the initial surveys, we asked followup questions by phone. These yielded "food stories" in which respondents offered more richly

detailed information about the challenges, fears, and hopes of their dietary worlds.
- Experience Prototype: Based on the initial surveys and food chats, we found that many participants were nostalgic about in-person shopping; this was especially important for elderly participants. The experience prototype was essentially a role-playing interaction which tested 3 touch points in a larger process (intake, ordering, delivery). Each respondent looked at an existing online store (Kroger or Meijers), and sent a screenshot of their selection ($30 participation stipend, plus free groceries). The study, carried out over 3 weeks, yielded 8 participants (15 orders total), and revealed both user needs and failures of current online experiences (expensive or unwanted substitutions, etc.).

7.   Data analysis

One of the most important goals was to reveal the ways in which unalienated value generation exists, and is still circulated, despite the context of extraction, exploitation and colonial legacies. The data revealed the following forms of unalienated value and its circulation:

Unalienated value form category	Example
Heritage recipes	An example recipe that is used in the community is *Roasted Squash Salad with Fonio and Warm Vinaigrette*. Squash is a traditional plant across many Indigenous cultures. The African calabash is a squash, used in food as well as instruments and ladles. "Follow the drinking gourd" is a Black song advising plantation escapees to follow the big dipper which points to the North (Detroit was codenamed "Midnight," because it was one of the last "stops" on the Railroad before attaining freedom in Canada.). This recipe is also highlighted due to its infusion with an African "super grain" called Fonio. While apples are not Indigenous, vinegar is a staple in Southern Black soul food. And it's delicious.
Cooking	Cooking goes beyond recipes: for example the broth from one dish can be used in another. Sharing kitchens, techniques, utensils and so on are all examples of how this unalienated value form circulates.
Sharing	Sharing between farms is commonplace. For example, seeds are shared; finances; and so on. Customers are also shared: if one farm lacks a product, and the other has it, they will take pains to redirect the customer.
Urban farming and growing traditions	There are a variety of farming practices being utilized within the urban agriculture scene and an example is the no-till technique, which was created by George Washington Carver. Both farms are using the silage tarps as a form of method to stop the germination of seeds. It is used to block off light and keep the environment warm and moist.
Sense of community	The following are examples of how community shaped and formed within the farming sites, where the emphasis is on persevering our ancestral memory: 1. Harvest festivals 2. Opening ceremonies 3. Language and artifacts that reflect African culture

	These are two day events based on live music, learnshops, vendors, children's activities, farmers market and farm tours. Opening ceremonies acknowledging the Anishinaabe land that is farmed are increasingly common, and speak to the need for inclusive forms of emancipation (see section 8c).
Making do	DIY construction is a common phenomenon among urban farmers. Examples include harvesting honey from bee hives they organize and maintain; constructing solar panels; making hoop houses, and so on.
Language and conceptualization	Subtle language distinctions marked social bonds and shared understandings. For example, during COVID social distancing advisories are disseminated on the internet, public signage, and restrictions applied throughout the country. But at the field sites they used the phrase, "physical distancing through the act of social solidarity" to allow us to sustain that value as we seek new ways to commune while sheltering in place.

Also evident from the data was forms of value extraction. For consumers these included:

Alienated value form category	Example
Seduction of unhealthy foods	Due to their urban locations, access to grocery stores require a 5-10 mile commute for most families in their area. And the local convenience stores are a poor substitute: they sell unhealthy (and seductive) products. At every checkout there are sweets, carbonated beverages, and ultra-processed foods that offer brief moments of pleasure, but for the price of health and well being.
Seduction of convenience	The very nature of food apartheid in urban areas is predicated on the gravitational pull of convenience. If you work a grueling job for low pay, stopping for groceries (a long trip) and cooking food is perhaps not even feasible.
Healthy food apartheid	Prices of healthy food become too expensive to urban communities. Many of the informants reported shopping in the suburbs to buy foods due to the lack of access to affordable fresh food in their own communities. Economically this means money is drained from poor neighborhoods, and delivered to wealthy ones.
Low-income jobs	Due to Detroit"s extreme levels of white flight to the suburbs, many urban areas are reduced to offering limited jobs, most at low pay. These low wages do not provide a sustainable income for families.
Corporate grocery stores	Informants complained that the fresh foods sold in urban areas are at higher prices than the suburbs. One tenant of the Riverfront apartments described the market in his area as follows: "if it"s white then it"s right. This store isn"t for my people."
Fast food	Fast food restaurants are the main attraction in some urban areas. Urban youth report using McDonalds" internet to do homework; so the unhealthy nature of these corporate foods are driven by the lack of many services, not just grocery stores.

Finally the data also showed "leaks" of value for urban farmers by online fees:

Site of value extraction	Example
Consumer and producers both pay fee for each use in the online market (like Amazon)	There are usage and transactional fees that the producer and consumer take on when using online grocery/produce ordering systems.
Producer loses fee to online payment system enrollment	There is a sign-up fee for some systems.
Bank takes a fee from the producer for allowing credit card transaction	Producers lose money from the fees occurring using a payment gateway and merchant accounts that transfer money to the bank from online transactions.

Of course real life is not divided up into discrete categories: consumers are also producers (often the term "prosumer" is used). Some forms of value generation blur or hybridize various categories, as do some forms of extraction.

In the case of the Northwest Initiative project, two commonalities stood out. One was a complete lack of online food delivery usage (100% of 44 respondents), despite the fact that this was the peak of the Covid epidemic. Given the frequent comment that they enjoyed the social aspects of physical shopping, one could view this as resistance to an extractive practice that would diminish sociality and conviviality. The other commonality was relatively unhealthy diets, heavy in fats and processed foods. In that case it seems like capitulation to extraction, endangering health in ways that produce profits for large corporations. The kind of online marketing system we envision here would allow these two tendencies to modify each other: making locally produced, healthy farm products more available would improve diets, and if the online system was designed to encourage sociality (in-person meet ups, online chatting, sharing, buyers clubs etc.) it would offer technological scaffolding to improve, rather than detract from, conviviality and communitarian ways of living.

8. Moving from analysis to design

Given the analysis above, our goal became to develop an online system that, while perhaps starting from compromise with the present, could gradually evolve toward minimizing the forms of alienated value, and maximizing unalienated value. To accomplish this we had to first recognize **preliminary caveats**:

1. Starting forms may not be entirely only online. Dual forms--having both a physical location and online--maybe be preferable, and even "online" may best manifest itself as something like a phone-activated interface rather than a website.
2. For some respondents, technology and alienation are closely related. We need to prioritize respect for their unalienated values form first, and its empowerment through technology second.

3. There is a tension between designing for generative justice, and making things democratic. The system can facilitate access to unalienated value, but it cannot dictate that someone buys healthy food or engages in a particular set of behaviors.
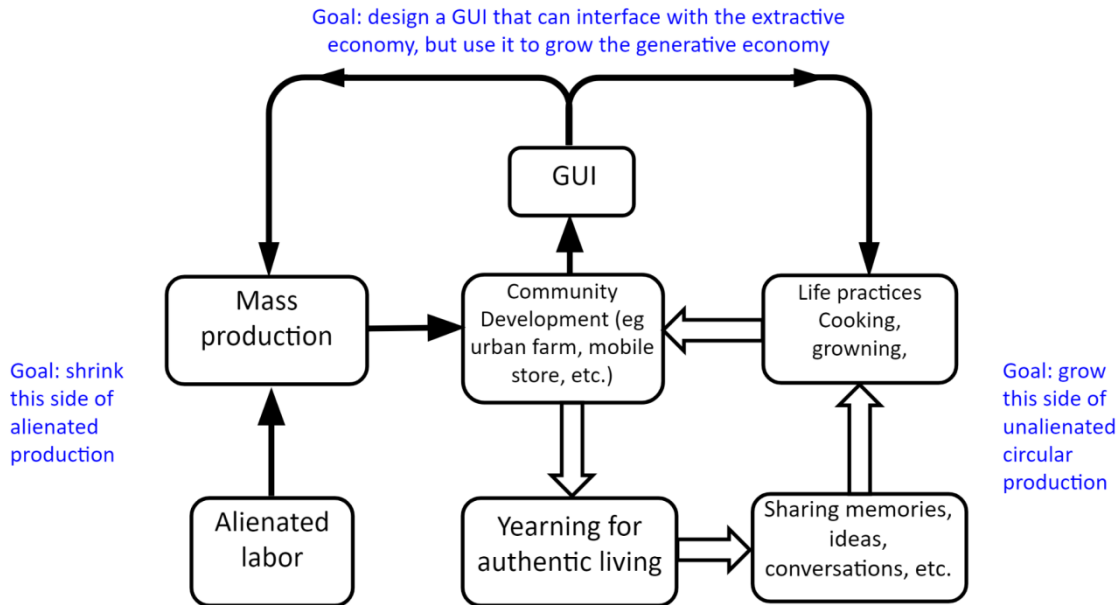

Figure 1. Alienated and unalienated value flow in food justice systems

Figure 1 shows a system diagram for generative justice as it would be visualized by groups such as the National Black Food Alliance. Translating that model for our system diagram for value flow, we can see that there is a context in which extractive production systems exist, but localizations of unalienated value flow can survive. Normally these are in an uneasy relationship. I might have a beloved, healthy, heritage-based recipe cooking in my kitchen, and share such things with a community of like-minded people. But that circular value flow exists *despite* the seductions of fast food, long distance drives, social media distractions, low paying jobs, food apartheid, and dozens of other "leaks" by which value is drained to extractive systems. The goal in figure 1 is to show how we can arrange hybrid forms of production that create a positive feedback loop for unalienated value.

At the intersections of the extractive system and the unalienated value circle lies the GUI. The simplicity of this box is deceptive. It is standing in for a vast sub-network (figure 2) by which our urban farms find customers, customers find marketing and delivery, community members share recipes, conviviality, growing tips, buying collectives, food clubs, and other forms of sociality from collective purchasing to (what we hope will be) a generative form of social media.
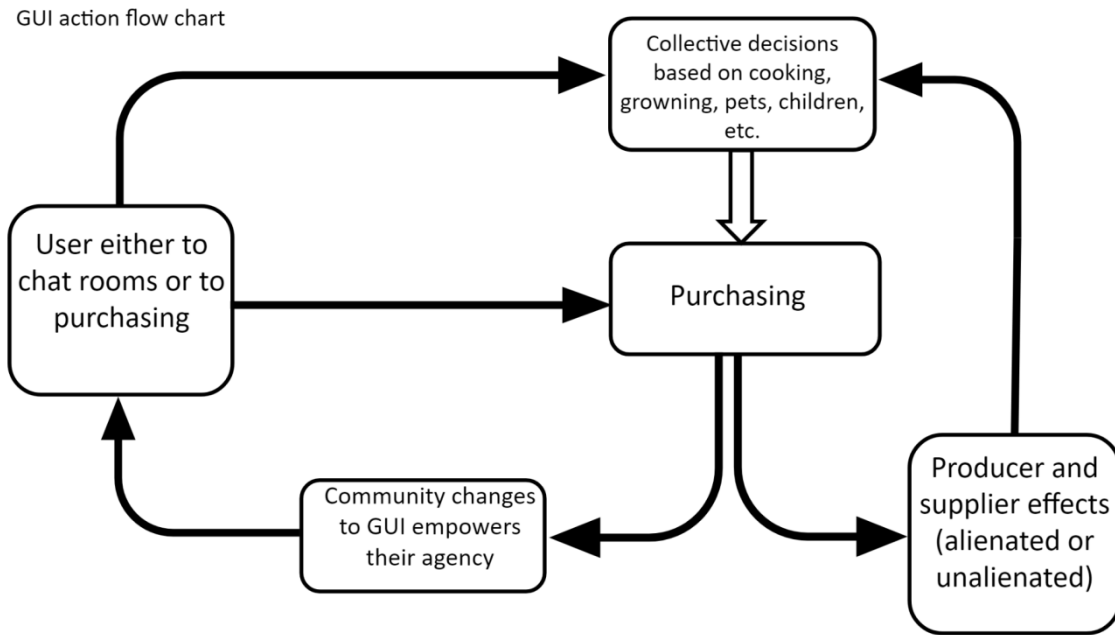
GUI action flow chart

Collective decisions based on cooking, growning, pets, children, etc.

User either to chat rooms or to purchasing

Purchasing

Community changes to GUI empowers their agency

Producer and supplier effects (alienated or unalienated)

Figure 2. User flow chart as they navigate the online market

In figure 2 we expand that GUI box to map out what might be the flow of user experience. Users start from an opening screen that provides them with the option of going straight to purchasing, or stopping by one of the chat rooms. This is in keeping with caveat 3, offering options rather than dictating that they must engage in generative forms. Even after entering the chat rooms, it is possible, of course, that users will demand unhealthy choices. We note that in the box on the lower right (unhealthy foods from corporate sources would be alienated value). That is simply the price one pays for maintaining a democratic system.
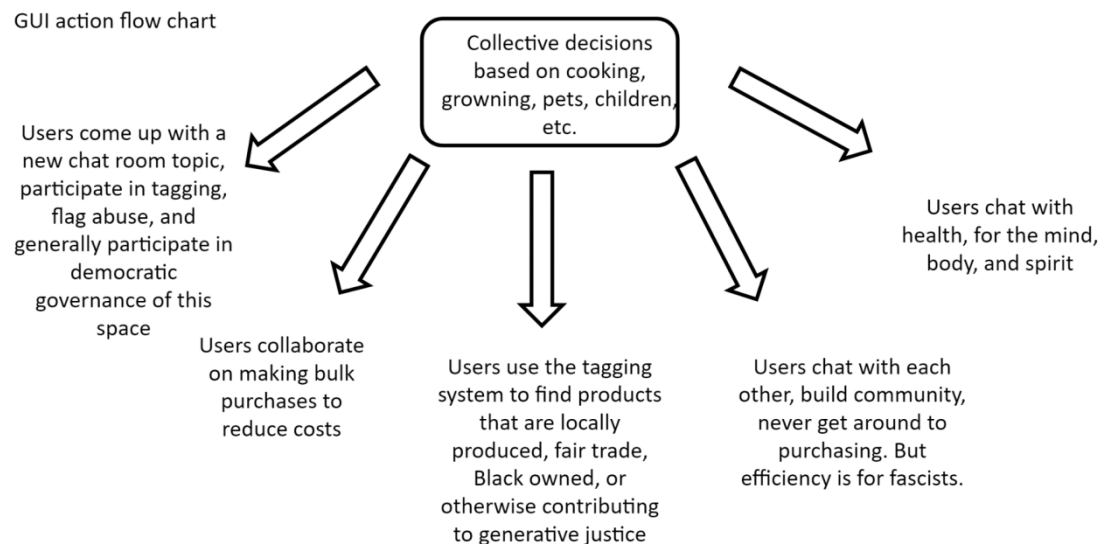
GUI action flow chart

Collective decisions based on cooking, growning, pets, children, etc.

Users come up with a new chat room topic, participate in tagging, flag abuse, and generally participate in democratic governance of this space

Users collaborate on making bulk purchases to reduce costs

Users use the tagging system to find products that are locally produced, fair trade, Black owned, or otherwise contributing to generative justice

Users chat with each other, build community, never get around to purchasing. But efficiency is for fascists.

Users chat with health, for the mind, body, and spirit

Figure 3. The network of activities and actions in the "collective decisions" node

We have labeled those chat rooms "collective decisions" but that too is deceptively simple. It is shorthand for a vast array of activities that could include informal chatting, media sharing, recipe sharing, cooking meet-ups, collective buying practices, gaming or other potential features (figure 3). Some of these collective decisions may affect the design of the system itself. The more user preferences inform the design, the more it will democratize its role in the community. But there will also need to be balance between meeting the needs of consumers, and meeting the needs of producers of these goods. These top level decisions will need to be decided by collective action between different stakeholders: farmers, civic groups like Northwest Initiative, and some representation from the community of users.

9. Outcomes

a. Online market for Detroit urban farms

Initial testing of the online marketing prototypes for the urban farms began in late summer of 2020. We conducted a rapid prototyping and user testing session with potential community users. We began with a small group of known users, and used snowball sampling to find more. One of the design methods we stressed was "learning from extremes" (Leadbeater & Wong 2010). Learning from extremes deliberately includes demographics from the far ends of the bell curve (youngest and oldest, etc.) to ensure that population averages are not skewing the results such that we fail the most vulnerable populations. This allows a more balanced view of what is needed (and possible), and minimizes the influence of researcher assumptions and constraints (knowing they will always be present in some sense). In addition to diverse community users, we solicited feedback from a food designer, a teacher, a farm manager, as well as a stocktrader to incorporate different forms of expertise and insight needed before we (urban farms and researchers) launched.

A "wireframe" prototype is shown in figure 4. We begin with options for shopping, learning, and becoming a vendor to indicate three levels of interaction:
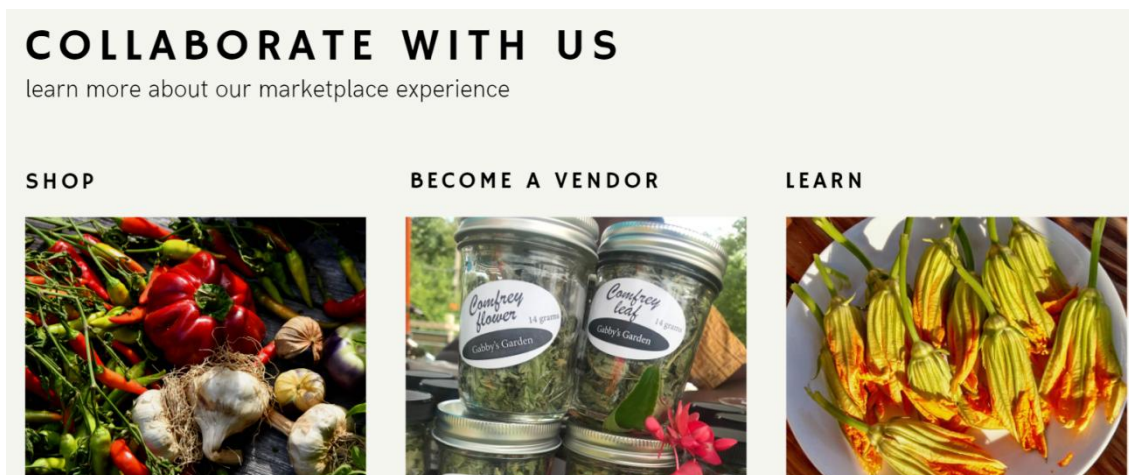

Figure 4. Prototype interface for the urban farms GUI

1. **Shopping**. No matter how "generative" the goals, the system has to be financially sustainable in the context of our present capitalist economy.
2. **Learning**. Sharing all the unalienated forms of value serves, at least in theory, two goals. First, there is positive feedback with the generative community (cooking, growing, celebrating, sharing tools and seeds, organizing, planning, etc.). Second, we strive to achieve secondary or meta-feedback between this loop and that of level 1"s ordinary shopping. That is to say, the more we can develop a platform for freely sharing unalienated value, the more opportunities to expand generative activities that can be sustained in the for-profit side of the interface.
3. **Becoming a vender**. Here is where the previously described metaloop is formally enabled (figure 5). If the system is able to grow and evolve, gradually absorbing more customers, localized sustainable vendors, and learning/sharing/organizing opportunities, a generative economic ecosystem could be enabled. This cannot simply be any vendor: the local McDonalds or Walmart would need to be excluded on the basis of their non-local corporate nature and unsustainable practices. More subtle distinctions would need to be applied to ensure that vendors meet standards for "generativity" as defined by the group.
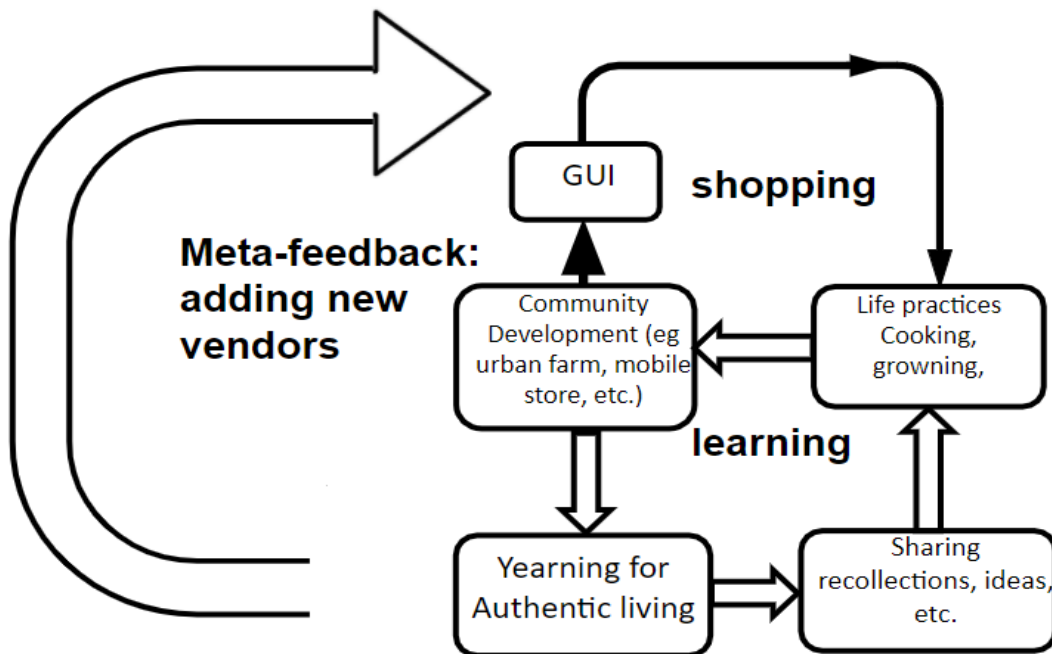

Figure 5. Meta-feedback: the unalienated value cycle opens opportunities for new vendors; who (if composed of generative practices) create new opportunities for unalienated value flow

b. Online market for Northwest Initiative

A prototype has yet to be launched for the online market supported by Northwest Initiative. Indeed its very existence is still somewhat controversial within the project management. The mobile food truck is still very much in service, and questions arise as to whether an online market would detract from food truck usage. On the other hand, the food truck does not run all year, and currently of the 44 respondents, zero reported

using an online food delivery system. One solution currently under consideration would be free courses training users, perhaps with a free food delivery for first time tryouts.

c. Designing for inclusive emancipation

The visual symbolism of the Detroit Farms GUI is a kind of embodiment of the intentions toward a design that is both emancipatory, in the sense of responding to histories of colonialism and oppression, and simultaneously inclusive, opening its doors to all willing to participate in a path towards just and sustainable futures. For example, we have forefronted images of Black farm owners and consumers, as well as their favorite products, but avoided the use of Pan-African colors and symbols that one sees on individual farm websites in Detroit. This strategy is quite old. Frederick Douglass, for example, rejected the "back to Africa" movement of his time, and promoted the idea that nations accomplish the most when they promote hybridity and cross-cultural collaboration (Eglash, 2019).

10.   Conclusion: evolutionary paths to just and sustainable futures

There is an obvious evolutionary path for these kinds of endeavors. One can imagine their expansion to entire community economic networks, perhaps empowered by blockchain or other means of securing both privacy of transactions and public sharing of opportunity (Eglash *et al.,* 2019). But such efforts must be guided by equity and access from the beginning. Otherwise a more inclusive design will fail to evolve; it will be designing for the core and not taking in account the many contexts of those who operate within the margins of society. Inclusion must consider those who are disabled, who have cultural values and economic class perspectives different from those who are designing, who are in touch with the social and ecological values that give the world it"s vibrancy. Asking, collaborating, and co-investigating in ways that are fundamentally based upon equity and access from the beginning is the only way that emergence of a generative economy can be formed through design.

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