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Resisting Industrial Food Systems on the Web: How Non-Profit Organizations Use Digital Technology for Sustainability Education

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RESISTING INDUSTRIAL FOOD SYSTEMS ON THE WEB:

HOW NON-PROFIT ORGANIZATIONS USE DIGITAL TECHNOLOGY FOR

SUSTAINABILITY EDUCATION

by

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A thesis submitted to the Graduate Faculty in Liberal Studies in partial fulfilment of the

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ABSTRACT

Resisting Industrial Food Systems on the Web: How Non-Profit Organizations Use Digital

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This thesis examines the link between how community-based organizations use digital tools with the fundamentally resistance-based philosophy that these organizations have at the core of their mission. It aims to uncover how non-profit organizations (NPOs) that work in community development through food and agriculture use digital tools, and how their digital communication strategies relate to issues of resistance to neoliberalism and industrialization in the food and agriculture sectors.

Using a foundation of existing literature on food and agriculture, climate change and waste management, critical theory, and technology in pedagogy, this thesis will contextualize how non-profits resist neoliberal regimes of de-traditionalization through community development. This thesis will utilize primary research on the digital strategy of an NPO that supports public schools attempting to incorporate vegetable gardens into their curriculum. The research provides insights into how NPOs make use of the benefits of digital technologies, and how they choose a strategy for employing these affordances in ways that are compatible with their core organizational philosophy.

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1. Introduction

The need for correcting the course of environmental policy across the globe is today more urgent than ever before. Despite the wide range of industries that are viewed as fertile grounds for correction, no sector has gained as much popularity in mainstream culture as food and, by extension, industrial agriculture. The environmentalist movement is helping to reshape how food is produced, packaged, marketed, consumed, and discarded. These transformations, however, are too infrequent and too small in scale to facilitate fundamental shifts. We have also witnessed the growing trend of eco-friendly branding sans environmentally-friendly operations resulting in a tendency toward "green" marketing to consumers without substantial environmental benefits. However, the demand for environmentally "friendly" products shows that there is undoubtedly an immense energy among the public whose concerns are not being adequately tapped by policy makers, agriculture producers, and retailers.

This thesis analyzes how non-profits that work in food and agriculture connect with and support individuals who are interested in practicing anti-consumerist and pro-sustainable habits in their daily lives. Part of today's environmentalist movement of consumers, these individuals are worried about their personal effects on the health of their bodies, their communities, as well as both local and distant ecologies. The reason non-profit organizations were chosen as a subject of study is their central role in community development and capacity building through education programs that allow the public the ability to maneuver through spaces and politics of food, nutrition, sustainability, and health. Many of these organizations also achieve community development through community building – connecting community members with similar interests and goals so that their individual power can be exercised to greater effect as a collective.

The thesis investigates how non-profit organizations—whose mission is to challenge the neoliberal food regime—conceive of, strategize, and use digital tools to assist in fulfilling this mission.

The first chapter introduces key topics and provides an overview of the thesis structure including methodology. Chapter 2 explicates the history of food and agriculture in relation to theories of the exploitative nature of industrialization, governmentality, and neoliberal policy. It also looks at movements of resistance to the industrial food system. Chapter 3 argues for education as a key component of these resistance movements and explores the role that non-profit organizations have played in this resistance, especially through environmental education that prioritizes exposure of individuals to spaces of nature and an empowerment of individuals through education about sustainable practices. Chapter 4 connects numerous issues pertaining to ICTs, NPOs, social media, and the politics of control that bind them together. This includes Gibson's theory of *affordances,* which posits that perception allows the preceptor to identify meaningful qualities of objects in their environment (Gibson, 1986, p. 127—143), as well as Foucault's concepts of governmentality and regimes of truth, which position surveillance and control in a larger social framework. The affordances and hegemonic pitfalls of digital technologies are then placed in the context of non-profits whose work is focused on education and community building.

Affordances thus become the entry point to discussing the various digital tools and social media platforms currently preferred by NPOs based on the motivations of these organizations as well as the perceived benefits of those tools. Section 4.3 reviews the most common media platforms and multimedia formats used for education and outreach by food and agriculture non-

profits. This review then leads to a synthesis that hypothesizes a general pattern of strategy that is common to uses of digital technology by NPOs.

Chapter 5 is informed by primary research that was done with an organization that works directly with public schools and informal educational spaces who want to use vegetable gardens as educational spaces. Through a combination of a stakeholder analysis and a survey of how this organization uses digital tools for outreach and community building, the hypothesis from Chapter 4 is tested against the results of this qualitative research. This thesis concludes with an argument that attempts to resolve the tension that the thesis question puts forth: NPOs use digital tools to further their mission without contradiction even though these tools are apparatuses of neoliberal surveillance and control systems. Contradiction is avoided because digital tools offer affordances for shaping public knowledge through education, and, secondly, because shaping public knowledge is necessary to establish systems where stakeholder network building can be successful.

1.1   Thesis Question

The main objective of this thesis is to better understand the role that technology plays in helping non-profits achieve their goals, where these goals are the empowerment of the public through education and community building. To this end, the thesis poses several research inquiries that will connect topics of food justice, industrial agriculture, social production, racial inequality, new media and technology, education, and community development over the course of four chapters. Each of these chapters will respond to the following research prompts:

a. Why are food and agriculture critical areas of study pertaining to the short- and long-term effects of global health and climate change?

b. Why are non-profits whose work is in community development through food and agriculture worthy of study?

c. How are these non-profit organizations utilizing digital tools and are these tools being used in ways that are consistent with the organizations mission?

d. Do the objectives of NPOs, especially those objectives that are oriented around online communication strategies, show a pattern of attempting to counteract the hegemonic effects of agricultural industrialization during the era of neoliberalism?

This thesis combines social theory of control with the most important topics that society faces today: climate change and the looming environmental and agricultural crises. To answer these questions, a research methodology was drafted that would explicate relevant issues in the context of climate change and the relationship that this phenomenon has to industrialization and detraditionalization. This methodology is explained in greater detail in the next section.

1.2   Research methodology

The structure of the thesis required a thorough understanding of the food and environmental justice movement as the values of these movements shape how many food and agriculture non-profits that work in community development do their work. Thus, the thesis begins with research into the contemporary literature around climate change and industrial agriculture, as well as inequality of risk associated with them. The negative effects of industrial production, especially in agriculture, then leads into a review of theory from sociology and environmental psychology that connects neoliberal policy and, by extension, industrialization to the phenomenon of de-traditionalization and how this symptom of capitalist control is used to undermine non-industrial modes of food production and a dependency on processed foods.

After providing a theoretical foundation for the relationship between environmental destruction and the role of community, NPOs that work in food and agriculture through community building are presented as part of a counter-movement to neoliberal industrialization. Specifically, the thesis looks at how NPOs that work in food and agriculture are attempting to resist industrialization and de-traditionalization through educational programs. Philosophies of education based in radical pedagogy and experiential learning are proposed as ballasts for how education serves the NPOs in their resistance to industrialization.

Chapters 4 and 5 present primary research into how these NPOs may use digital technology for education, communication, organization, and outreach. In Chapter 4, a survey of various NPOs is conducted to collect surface-level observations about how public-facing media such as videos, blog posts, social media accounts and web-based tools such as websites or third-party platforms are used. This survey is then used to highlight the most common tools, platforms, and literacies being employed, which is contextualized in relation to current literature in the field of Digital Humanities and media theory.

Finally, Chapter 5 uses case study data that was collected through the participation of members of a non-profit organization whose work supports formal and informal public education of food and gardening in order to gather deeper insights into the survey that can be found in the preceding chapter. This case study research is comprised of a stakeholder analysis and an open-ended questionnaire with key members of the organization about their approach to using digital tools within the organization. Access to this organization was granted during the author's tenure as a volunteer during which time he assisted with simple administrative duties one day-per week over the course of nine months from 2018 to 2019. The questionnaire was also sent to several

other NPOs whose mission is explicitly based in either capacity building, education, or community development around alternative food pathways. Their responses were collected and synthesized to create a broader pool of data.

2. Food, Agriculture, and the Neoliberalism

Greenhouse Gas (GHG) emissions are the driving force of a global temperature increase by between .8 and 1.2 degrees Celsius since the pre-industrial era (IPCC, 2018). While the repercussions of this increase are already evident, reaching an increase of 1.5 – 2 degrees could result in catastrophic climate events such as drought, flooding, ocean salination, and sea level rise occurring more frequently and with greater severity (Ibid.). Because damaging climate events require resilience to mitigate the toll taken on human lives, economies, and ecosystems, increased severity and frequency of such events will require increased measures of resilience that may not be possible without a radical re-framing of emergency response systems.

Currently, 60% of ecosystems are degrading affecting 270 million people annually in the form of flash floods, droughts, and lack of access to drinking water (UNEP, 2010). The likelihood is that, if climate change continues along its current trend, weather and, in turn, ecosystems will become unstable, coastal cities will flood, and the globe will be faced with an insurmountable challenge of providing refuge to millions of peoples fleeing climate-related disasters. Combine the current trajectory of 25% losses in food production by 2050 with the projected increase in the human population to 9 billion by the year 2050 (most of which will occur in middle-class of developing nations), the demands on agriculture and energy industries will increase while having to simultaneously reduce emissions (UNEP, 2010; Tilman & Clark, 2015). Thus, the issue of food becomes paramount: reducing emissions can be achieved while simultaneously developing sustainable means for feeding billions of people by transitioning to alternative food networks, reducing the amount of meat intake in the global diet, and mitigating the damage done by pesticides, and fertilizers (Sini & Lankowski, 2015; Steinfeld & FAO, 2006).

The environmentalist movement, beginning in the early 1970's, has led to some pressure on governments and corporations to analyze the harmful effects of a horde of global practices including over-reliance on fossil fuels, massive increases of Green House Gases (GHG) in the atmosphere, industrial agriculture, non-renewable resource extraction, factory farming, and waste management. While several nations and supra-national governments have made efforts to enact policy to correct some of these issues, and while many corporations have also begun to advertise their commitment to environmentally friendly practices, the primary source of change is found at the individual level of the consumer (where impacts on GHG emissions are minimal). Individuals whose values are strongly aligned with the environmentalist movement will put these values into practice through their purchasing habits, which creates demand for "green" products (Schlegelmilch et al., 1996) and generates favor for political parties that espouse environmentally friendly policy (McCright & Dunlap, 2011; Markowitz, Ezra M., et al., 2012).

This trend in environmental sustainability is a product of neoliberal governmentality that espouses liberty and self-responsibility within the free market. Neoliberalism is a "political philosophy that exalts individual freedom, property rights, free market transaction, entrepreneurship, and minimal state intervention in individual activities" (Iba & Sakamoto, 2014, p. 130) that has become the dominant political framework in contemporary western nations. The institutionalization of neoliberal policy has engendered a contradictory state-sponsored system that undermines personal liberties through policies of "privatization, commodification, marketization, deregulation/reregulation, devolution, free market, and free trade" that maximize corporate capital accumulation (Ibid, p. 131). By commodifying aspects of personal life and privatizing state-run programs, neoliberalism has led to a decentralization of power amongst

highly dispersed organizations and hyper-individualistic communities that struggle to combat the ruinous consequences of neoliberal regimes.

The question of how a person's values manifest in eco-friendly behaviors is important to answer if one's interest is in cultivating greater support for environmental justice, food sovereignty, anti-consumerism, or any other social movement that aims to undermine the patriarchal structures that directly support environmentally harmful industry practices. According to Jagers et al. (2016), the belief that the private sphere is a legitimate space for political action is fundamental to the emergence of the eco-citizens who use this space to make external their values about the environment to actualize what they perceive as a responsibility to correct asymmetrical power hierarchies. However, due to the de-regulation of industries by governments and the atomization of social groups into individual consumers, the eco-citizen's capacity is limited to placing pressure on corporate entities through purchasing power (Isenhour, 2010). Thus, the ability for these consumers to organize, gain access to new affordances, and end their dependence on consumer goods offers the potential to challenge the entire neoliberal regime that has been sustained by placing responsibility onto the individual consumer rather than the corporate sector (Akenji, 2014).

2.1 Large-Scale Industrial Food Production

Industrialization in the western world throughout the 20th century spurred a massive increase in the rate of production of goods. Originally used to denote an optimism around the mechanization of the farm, an increase of division of farm labor, and a combination of financial and regulatory involvement of the government into farm practice, this restructuring of production systems facilitated the growth of industry monopolies as well as the centralization of

capital growth to the benefit of those who controlled the means of production and to the deficit of the public (Lavin, 2009). As American cities were being transformed, so, too, was the rural heartland; Through a combination of rural-flight (the movement of people away from their small hometowns to larger cities), globalization of industry and weakened labor unions, and the continued accumulation of capital, the United States entered a spiral of losing small, family-owned farms, forcing farm workers to accept demoralizing employment condition, and a splintering of local communities based on class and race (Crump, 1998). The outcome would, by the turn of the millennium, be clear: an aging farming population, a disappearance of "local" food sourcing, and the domination of the agriculture sector by massive corporations engaged in mono-crop production (USDA ERS, 2017).

Economic policy only worsened the collapse of farming in the heartland leading to a farming crisis in the 1960's and 1980's. Industrialized agriculture and accumulation of capital made it easier for large farms to reduce the cost of labor and production. Meanwhile, the need to stay competitive in the marketplace forced small and medium-sized farms to take out loans in order to pay for machinery, seeds, and pesticides that promised increased yields—a promise that would come true in devastating fashion. Farmers divested of diverse crops in order to maximize efficiency through mono-crop agriculture and, when prices dropped due to overproduction in the market, many had no available equity to pay back the loans (Thompson & McCubbin, p. 461), nor could they compete in a market after becoming dependent on costly seeds and pesticides which they could no longer afford. This did not only occur in the United States. Multinational financial bodies such as the World Trade Organiation and the International Monetary Fund would duplicate similar crises across the world, especially the global south, by deepening the neoliberal

agenda of advancing free trade and industrial mono-crop agriculture (Magnan, 2014, pp. 74—77). For farmers in developing nations, participation in the global marketplaces was forced upon them by international organizations, which required the adoption of modern technologies but resulted in financial bankruptcy and indebtedness to western nations (Holt-Giménez & Nestle, 2017).

The environmental effects of the transition to large scale industrial agriculture were multi-faceted in their devastation. Promising high-yield, specialized agriculture combined with fertilizer expanded despite "low-impact" crop management practices increasing yield as high as 80% (Mueller & Binder, 2015, p. 52). Large scale specialized agriculture led to the destruction of natural ecosystems including half of all former temperature deciduous rainforests, grasslands, and savannahs (Balmford, Green, & Phalan, 2015, p. 57); Prioritizing increased crop production led to the widespread over-use of artificial fertilizer, pesticide, and water; Livestock production necessitated factory-farming techniques that offset the price of cheap meat and dairy with dangerous labor conditions, horrendous livestock welfare, and mismanagement of environmentally harmful waste (Singer, 2006, p. 29—35); The centralization of power in agricultural manufacturing led to a dramatic reduction of diversity in the selection of vegetables, fruits, and grains as well as the prioritization of maximizing profits at the cost of nutritional value. Finally, the environmental repercussions of these practices were significant, and are likely to never be reversed entirely.

2.2   Over-Production and Inequitable Access

Through processes of industrializing the production of food, farming in developed and developing nations produces more agricultural products than ever before. In addition to the

agricultural products being created, there are also large amounts of by-products and waste generated from the chemically-intensive farming methods and industrial feeding operations employed in conventional farming. The production of ever-increasing quantities of food stuffs is largely a product of changes in farming techniques such as automation, genetic engineering, mono-crop agriculture, and exhaustive soil practices combined with less food waste at the farm and during transit.

Also significant in the dramatic jump in food production was the substantial investment by manufacturers in food processed with sugar and oil by-products – the cost of production went down, which benefitted those producers who ran highly efficient operations. Despite the increase in the amount of food being produced hunger is also increasing and, because of how food is produced, the quality of food that is commonly available is becoming poorer. Furthermore, the types of food available are increasingly limited and the labor force that produces the food faces increased a variety of issues such as poverty, hunger, and unfair and unsafe workplace practices.

The problem of hunger throughout the world despite a massive investment in industrialized farming is made even more stark by the rate of products that become waste rather than food. Between 30% and 40% of all food products are never consumed (Gunders, 2012). All food production costs energy to produce. The gases emitted by livestock, the clearing of forests for pasture and monocropping (the majority of which is used as feed for the livestock), and energy expended for food production are responsible for agriculture being the second largest contributor of GHG second only to the energy sector. Most of this waste occurs due to overproduction due to the precarious nature of farmers as a result of industrial mono-crop

agriculture (Gustavsson et al., 2011). While this overproduction does make it to retailers, they are stored until they spoil or are discarded for a multitude of reasons that have no impact on the safety or nutrition of the product such the discarding of "ugly" produce that fails to meet USDA cosmetic standards (Kenny, 2018).

The failures that were the driving causes of food waste in the past were improper handling at the farm or during distribution and improper storage techniques especially cooling (Kling, 1943). Today, however, improved technology and automation have mitigated food spoilage at the farm and along routes of distribution but have generated entirely new problems. Automation causes a decrease in costs, and large-scale production produces more food products. Together, this leads to an over-saturation of goods in developed nations where consumers have come to expect bountiful–but nearly identical–goods to choose from at their supermarkets.

Furthermore, research shows that inequality is the hallmark of the food industry; This inequality includes a significant reliance upon undocumented foreign laborers in the fields, packing houses, and manufacturing plants process due to their acceptance of low pay and unsafe working conditions, and a lack of power to resist harassment by their employers. Inequality is simultaneously found in the consumer end of the food industry; Black and Latino neighborhoods (especially children in those neighborhoods) that are products of institutional and de jure segregation are targeted by fast-food chains whose products are nutritionally high in fat, salt, and sugar, and are major contributors to the negative health trends within those communities, such as obesity, high blood pressure and diabetes, among others. (M. Bower, et al., 2013; CSPI, 2013).

2.3   De-Traditionalization of Food Consumers

As the previous sections in this chapter make clear, the environmental toll of modern large-scale industrial agriculture is severe, and this toll is directly linked to an unjust distribution of harm in the global population, especially in developing nations where natural ecosystems are being devasted due international pressure to accommodate global market demands. But, in addition to the dangers of environmental degradation and the negative health effects associated with highly processed foods exists another threat: de-traditionalization. De-traditionalization, according to Beck, occurs as a "social surge of individualization" through a process of removing people from social structures and dispersing them across a globalized marketplace where they can flow freely as interchangeable components – a condition that allows for maximum liquidity of their skills and, therefore, greater success in the marketplace (1992).

In what Beck calls "reflexive" society, the individual is removed not only from social structures but, also, from nature. De-traditionalization occurs simultaneously in displacing the individual from the group and from a union with the land:

> In developed civilization, which had set out to remove ascriptions, to evolve privacy, and to free people from the constraints of *nature and tradition*, there is thus emerging a new global ascription of risks, against which individual decisions hardly exist for the simple reason that the toxins and pollutants are interwoven with the natural basis and the elementary life processes of the industrial world. (Beck, 1992, p. 41, emphasis added)

Thus, not only is society segmented into individuals, but it is also disconnected from their local environments. By eliminating the bonds of reciprocal need that exist between individuals and their communities and ecosystems, the marketplace and its hyper-industrialized foundation replace human cooperation as the dominant system for society:

The detraditionalized individuals become dependent on the labor market, and with that, dependent on education, consumption, regulations and support from social laws, traffic planning, product offers, possibilities and fashions in medical, psychological and pedagogical counseling and care. All of this points to the special forms of control […]. (Beck, 1992, p. 90)

The control to which Beck refers is precisely the Foucauldian concept of governmentality wherein daily life is constantly filtered through apparatuses of the state, and social control is exercised through technologies of self-control that force the individual to internalizes schemes of regulation (Escobar, 1999; Haider, 2015). Under this theory, neoliberal western society uses schemes of rationalization to segment the identities of individuals in order to create a schema of problems for the individual to perceive within themselves (based on the hierarchical structure of the marketplace, i.e. it's losers and winners) and reflexively desire to correct (Rose 1998).

In his book about the emergence of "24/7" market activity and its significance in the context of late-stage capitalism, Jonathan Crary (2013) identifies a direct relationship between persistent global market operation and the instrumentalized condition of visibility of people through social change. Alongside illumination (i.e., the denial of naturally occurring darkness) of the cityscape came the dissolving of that natural biological process which, up until the 21st century, had occurred almost universally among all humans – sleep. Crary argues that the needs of the global market have penetrated the cultural understanding how the individual exists in relation to the larger collective of society through 24/7 time as a technology of control. By imposing a new set of rules without any restrictions, the individual is forced to accept the illusion of freedom to choose their time. This is illusory because this time is a product of the acceleration of the defining principles of capitalism, which include the assumption of human needs and desires

as well as the physical world that hinders a completely fluid flow of capital as being totally mutable (Crary, 2013, pp. 41–43).

Just as Beck suggested that the detraditionalization of neoliberal capitalism was removing people from their communities as well as the environment, so, too, does Crary, suggesting that the modern factory emerged as an "autonomous space in which the organization of labor could be disconnected from family, community, environment, or any traditional interdependence or associations" (Ibid., p. 63). Similarly, neoliberal regimes are responsible for the production of nature as a commodity in the marketplace through the "mediation of labor" and splitting of nature and society (Escobar, 1999, pp. 6–7). Thus, both natural environments *and* individuals become entities who are controlled by the insatiable demands of the market, which take form as isolation from interconnected systems that preceded 21st-century capitalism. Finally, because 24/7 time is, as a matter of necessity, all-encompassing, all time becomes subject to the prospect of market participation and even resisting this technique of control will naturally manifest within the marketplace.

Given the current state of global food production, its industrialized scale, its limited oversight, and its tremendous cost (which is primarily paid for by communities without economic or political power), it becomes apparent that the industrialization of agriculture and livestock production is part of the neoliberal regime of segregating individuals from communities and from nature. The urbanization of the globe, the de-skilling of individuals of indigenous knowledge and agrarian practices, the imposition of reliance upon the marketplace and exclusively western "expert" knowledge (whose training is funded by market giants) all facilitate a structural dependency upon industrial modes of production with the promise of greater freedom. The

environmentalist movement, as resistance to these regimes of power, attempts to raise these regimes and their exploitative practices into the public consciousness. By making such exploitative tendencies public knowledge, individuals can then organize to not only pressure government and corporations to correct their history of accruing capital at the expense of community and environmental health, but also attempt to re-introduce traditions of food production back into public consciousness.

2.4   Urban Consolidation, Racial Segregation, and Food Justice

It may be argued that detraditionalization is an unintentional by-product of complicated political and economic processes which no group or institution explicitly or intentionally orchestrated. This was assuredly not the case in America and its long history of subjugation of foreign non-white peoples, especially African Americans. Racism is inextricably linked to government policy and cultural tradition from America's origin. Slavery, sharecropping, and the Jim Crow eras led directly into an existential crisis among the Black community that included explicit exclusion from opportunity that might arise from the financial power of education and land ownership. Those racist policies, which sought to maintain the dominance of white, land-owning men, evolved but did not entirely disappear from American governance.

From the 1940's all the way to the present, policies at businesses as well as local, state, and federal levels of government systematically and explicitly denied black people access to home ownership through redlining and discriminatory mortgage policies which constituted institutionalized and *du jure* segregation (Rothstein, 2017). The segregation of American neighborhoods according to race while providing a means of capital growth through home ownership to whites had widespread effects in the lives of virtually all African American peoples

and major cities in general. The combination of white flight to suburbs and the consolidation of housing in redlined neighborhoods into large housing projects led to industrial zoning near urban centers to allow for rampant pollution (Ibid, pp. 54–57). The aftermath of these policies produced what is now considered an environmentally unjust system that prioritized the health and well-being of white suburban home owners over those of largely poorer minorities living in cities, and a systemic denial of equal access to necessary resources such as quality education and food.

In a review of 16 separate studies on fast food restaurants and obesity in the context of socio-economic status, 76% of these studies found that fast-food restaurants were more prevalent in low-income neighborhoods compared to middle and high-income areas (Fleischhacker, et al. 2011, p. 465). However, it is not merely the density of highly caloric but nutritionally empty fast-food products that has a more significant impact on the health of minorities as opposed to white people. Small grocery and convenience stores are more common in urban areas and often stock calorically dense foods while large supermarkets, which sell healthier food products at lower prices, are not nearly as common in those areas (M. Bower, et al., 2013, pp. 33—34). This trend signifies a historical consequence of "racial residential segregation" (Ibid.) wherein minorities are restricted to cities through a long lineage of redlining and du jure segregation combined with predatory corporate practices that advertise unhealthy food to minorities, and especially children/young adults (M. Powell, et al., 2013; CSPI, 2013).

The focus on "food deserts" came about to mark those communities where the marketplace of foodstuffs was failing to reach communities that face systemic poverty, but also attempted to put pressure on local, city, and state government agencies for failing to provide sufficient assistance to those communities. The problem of food deserts was emblematic of the

food justice movement that encapsulated two missions related to food and agriculture: *food access* – the ability of a community to produce and consume healthy food; and *food sovereignty* – the right of a community to define their own food and agriculture systems (Hope & Agyeman 2011, p8.).

Frequently, the environmental justice movement, which seeks to end the disproportionate share of burden that poor communities are forced to endure, is an ally of the food justice movement. Together, the food justice and environmental justice movements set sights on dismantling the racist policies that have overwhelmingly placed undue burden on the poor and on minorities (Hope & Agyeman, 2011, pp 7–10.). The environmental justice movement challenges the standard practice of allowing poor and Black and Latino communities to reside alongside large industrial facilities that pose serious risk to nearby residents. These policies are consistently pushed through, often due to a lack of power by the local community, until more affluent and white residents begin gentrifying these neighborhoods at which time investment in urban renewal projects spurs increased housing prices and ultimately compounds gentrification even further (Gould & Lewis, 2016).

The food and environmental justice movements focus not only on whether a community had access to food, but the quality of that food, its impact on the community's health, the higher cost of food in low-income areas, and the environmental costs associated with the production and waste management of agriculture and livestock products. The food sovereignty movement places priority on finding avenues for local and indigenous communities to have control over their own food production, i.e. to have sovereignty over local environmental conservation, local food production, and local labor justice in the wake of failed neoliberal free trade policies that

have spurred global food instability (Edelman et al., 2016, pp. 921–927). Organizations such as La

Via Campesina and various farmer—led coalitions work against the neoliberal policies that define

and support the "corporate food regime" (Holt-Giménez, 2011, pp. 313–323).

3. Education as Resistance to Neoliberalism

Under capitalism, Marx argued, people are alienated from the product of their labor as well as nature itself, and the entire production process makes humanity "subjected to a reified dominance" (Saito, 2017, p. 41). The reification of dominance eliminates the various natural connections that human beings had between the land and one another, and transforms these interactions into "indifferent, external, and accidental relationships" where all things are reduced to resources for extraction (Ibid, p. 42). Community ceases to exist, and domination of the working class becomes stratified and naturalized in social and cultural spheres. This, according to Lefebvre, is where dominance is asserted through a hegemony over society, where "the connection between knowledge and power is [..] made manifest" (Lefebvre, 1991, p.10).

Because the production of knowledge is central to how hegemony exerts itself to produce public consciousness, then education, too, is crucial in the reproduction of dominance. This was the conclusion of both Freire and Curle, who concluded that education is often an agent for the continued dominance of the poor and working class, especially in the global south. First published in 1968, Freire's *Pedagogy of the Oppressed* explicitly names education in western nations as a system for maintaining oppressor-oppressed dynamics in place, using fields of knowledge as tools for manipulating communities and prescribe meaning to the oppressed (Freire, 2005, p. 60). Curle similarly positioned formal education as a structure built to support and enable what he called "competitive materialism", a prioritization of material acquisition in order to develop *economy* with the elite as primary beneficiary (Curle, 1973, pp. 3—5). Educational systems often place people into the state of being exploited through institutional methods such as wage labor and debt while instilling an inability to have empathy for fellow human beings, making

cooperation difficult and promoting conflict based on class-identity (Ibid, pp. 7—12). The type of education they wanted to see in the world would be centered around the student, and not bundles of facts; They did not want education that serves as the arena where students purchase access to a system that would make them oppressors or oppressed, but, rather, an arena for self-motivated learning.

Others also identified a link between different structures of attaining knowledge in the world and how this may impact socio-political formations of citizenship and community. One of the defining principles of pragmatism, a philosophical tradition established in the United States during the late 19th century, is in providing society with a framework where perceptual knowledge (i.e., meaning attained by assessing experience by its relation to other experiences) makes the individual more capable of being a participant in the world (Heft, 2001, p. 43). One example of this was how Pragmatists conceptualized democracy – for democracy to be genuine and sustainable, it must be composed of individuals capable of free and discerning participation in the world, and democracy must promote those institutions, such as education, that help make these individuals (Bernstein, 1998, pp. 144—152).

It is apparent how integral education is to class-based politics and the way in which society uses formal education institutions to structure and reproduce hegemonies of power and control. Informal education can, in some instances, serve as a stage for resisting those hegemonies present in formal systems. This is especially true for informal systems that are built by communities for the reproduction of their own beliefs, or by communities that are actively fighting spheres of public knowledge that have been used, for example, to dismantle their ability to exist altogether. The looming environmental crisis, which threatens the existence of all people,

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is one such sphere of public knowledge. This chapter will examine how non-profits act as platforms for informal education on food, agriculture, and environmental sustainability. Section 3.2 will also provide insight into how shifting away from the classical education systems that were critiqued by Freire and Curle can contribute to the growing public awareness of environmental issues and the public's capacity for determining its own fate through community-based initiative.

3.1   Non-Profits and the Fight for Sustainability

Efforts to counteract the social, environmental, and agricultural damage of industrial food production are now a cornerstone of the sustainability movement. Food and agriculture are now central focal points in this social shift across the Global North, especially within the food justice movement. The food justice movement has "stepped up—supported largely by the non-profit sector—to provide services and enhance community agency in our food systems" in order to rebuild the "public sphere" that neoliberal globalization has decimated (Holt-Giménez, 2015, p.24). These pressures on the neoliberal food systems demand changes in how the industry approaches food production and marketing to consumers, how the members of the public participate in their relationship to food, personal health, and environmental sustainability, and efforts to enact political change that can support the goals of the movement.

As made clear above, NPOs are frequently at the core of these movements to enact political, social, and industry trend changes. For example, SlowFood has become a global movement to counter the "fast food" trend, working with small, heritage food producers to increase market brand recognition; GrowNYC has given millions of New Yorkers access to fresh food and vegetables (including those with government-funded supplemental income) while simultaneously providing local farmers a direct market to consumers; The National Young

Farmers Coalition is battling the drastic decrease of family-owned farms on American soil by supporting new farmers with training, mentoring, and financial management resources; Just Food advocates for local and sustainable farming while offering training, organizing volunteers and internships, and providing support to small and medium scale farms. These and numerous other organizations serve people who face inequitable access, disproportionate risk, and lack of power to influence environmental and agricultural policies that have significant impact on their communities and on their individual lives.

These examples are only a small sample of non-governmental organizations with offices in New York City whose objective can be described as increasing healthy, local food access to communities that have been systematically blocked from nutritionally healthy and culturally appropriate food as a result of corporate interests and government policies. While there are some for-profit entities that advertise themselves as being a part of the food movement, the for-profit model works directly in opposition to the community-driven and, often, free/open source methods that these non-profits employ. Research universities had been sources of important agricultural development in support of local farmers, with as much as $10 created for every $1 that went into research. However, many of these institutions have become co-opted by the largest and wealthiest agriculture companies that control the areas of research; and whose financial investments help fund tenure-track positions at universities, which allows these companies to obstruct research that may be potentially damaging to the success of their company or product (Food & Water Watch, 2012).

3.2   Using Gardens as Learning Environments

In the early 20th century, John Dewey described new, progressive education methods that were emerging as a critical response to the traditional formula of teaching the young. These progressive philosophies of teaching held that "there is an intimate and necessary relation between the processes of actual experience and education" and that understanding experience was fundamental to the educational process especially through interaction (Dewey, 1938, p20). In order to facilitate an optimal experience where education takes place, educators could use objective conditions, which include the variety of tools (both physical and social) to shape a student's experience.

It is becoming more common for various institutions to utilize gardens and natural environments as tools in experiential learning environments. The use of gardens has been widely adopted by many schools across the United States, primarily in elementary schools, and proven to aid in providing students with a variety of insights and benefits (Blair, 2009). School gardens are associated with increased exposure to natural environments where greater interest in subjects such as food can take root and were shown be responsible for improvements in "observational, ordering, comparison, and communication science-processing skills" against control groups (Ibid.). In a study of an international school garden effort, Bowker and Tearle found that school gardens can "provide a focus, be a good setting for integrating and delivering many aspects of the school curriculum, and offer the potential to enable children to experience deeper understanding of ecological systems, which can help them to become more environmentally aware of global issues and solutions" (2007). Thus, school gardens are helpful

for education in the traditional curriculum of math and science as well as venues for a better understanding of environmental issues.

John Dewey's suggestion that considering the individual experiences for education could be beneficial for the student's performance was complemented by the reversal of the top-down approach of the "traditional" educational system. Paulo Freire championed this de-hierarchical structure of education in *Pedagogy of the Oppressed* (2005) where he espoused a system for educating the public that did not passively support greater social inequality, and which could be reinforced within the classroom. Taken in the context of gardens as educational environments and their role in improving ecological education, using school gardens to combat global issues of environmental and agricultural injustices would be consistent with the framework that Freire had envisioned.

3.3   Novel Approaches in Education Using Technology

Both formal and informal educational settings have been implementing technology with varying results. The motivation for using digital technology, especially tools for distributing information widely across the net, vary as did the design and marketing of those technologies to educational institutions. For example, in the years following 2008, the language around newly released digital products shifted away from the almost-science-fiction to be more realistic: "In place of the Singularity, 'the social'; in place of cyberspace, check-ins; in place of immersive virtual reality (VR), Web services and targeted apps" (Jones, 2013, p. 3). This turn away from the techno-futurism does not mean that technology failed to be used in new and meaningful ways.

Digital platforms offer students and educators the ability to engage asynchronously and from distant locations. Considering how prevalent smart phone use is today, these platforms make education more accessible especially with user-generated content on websites like YouTube and Wikipedia. While educators in traditional classroom settings have tried to implement social media-based assignments, the results were mixed (Bennet et al., 2012; Hamid et al., 2015; Badia, 2014). Instructional materials such as textbooks are now frequently published digitally as well as in print form. One such text is *Debates in the Digital Humanities* (Gold, 2016) which is open-source, hosted online without formal gatekeeping mechanisms such as pay-walls or login requirements. This digital textbook has affordances that its physical print version does not have (e.g., because they exist online, they can be accessed anywhere and by anyone so long as the user has a device connected to the web).

A growing movement is now opting to utilize many of the digital tools and online resources to forgo formal learning in favor of "do-it-yourself" education. This entails using non-accredited open-learning professional networks where learning material is produced either by educators from accredited institutions or by field professionals for anyone with access to the internet (Kamenetz, 2011). Many of these networks publish instructional videos and supplementary text focused on a specific topic and often designed to resemble a formal class curriculum.

While a majority of the examples above are used to enable asynchronous distance learning, digital technology can also foster opportunities for communal learning. In a study of the Farmer's Market Coalition (FCM) listserv, Quintano and Morales found that a member-based non-profit organization dedicated to advocating for farmers' market used a digital publishing and

distribution network to promote education about food and agriculture while building capacity for leadership in these fields (2015). The listerv produced effective community building through education that emphasized the contribution of every individual:

> The listserv is an educational platform, the effectiveness of which relies on interaction and dialogue — on participation within a community of practice. Within the context of the listserv, the opportunity is available for anyone to take a leadership role in answering questions or providing advice, providing a potential pathway to empowerment. The conversations that take place on the listserv result in relationship building; thus collaboration occurs as well as the informal exchange of information. These processes in turn lead to the emergence of informal distributed leadership. (Quintano & Morales, 2015, "Results")

By allowing stakeholders to contribute to the exchange of information, novel pathways for community action were created. The result is a community of practice wherein individuals interested in participating in alternative food pathways can access education as well as a praxis for action that aligns with their beliefs on food and agriculture.

The praxis offered by a NPO working in food and agriculture using digital tools is an important insight for the research questions that inspired this thesis. Digital technology, when employed to help build community through education and collaboration, can become a powerful tool for resisting policies that may be counter to one's beliefs about food and agriculture. However, these technologies are typically products whose design may complicate this mission-oriented goal of community building. The next chapter will explore digital tools further, providing a historical and theoretical perspective of how ICTs have developed, their status in contemporary society, and how these technologies relate to the objectives of mission-driven organizations.

4. Non-Profit Use of Digital Tools for Outreach and Education

The emergence of 24/7 time, as discussed in section 2.3 of this paper, is inseparable from the digital "information age" that has come to be defined by an explosive pace of increased speed and availability of tele-communication infrastructure. Digital technology shrunk the social sphere by allowing people to move and communicate faster and more cheaply[1] than ever before. The result was a dramatic transformation of economies in the Global North. In a paper presented at the Conference of Digital Information, Michael H. Goldhaber explained how the traditional "material" economy, which relied on meeting the demand for material goods, required a fundamental change of course after it achieved an untenable hyper-efficiency of production (Goldhaber, 1997). This, he argued, led directly to a new economy—the attention economy. Extracting value from the labor process in a factory setting was no longer viable due to the spread of cheap consumer goods in the marketplace. Attention, now a scarce commodity, becomes a new standard currency (Ibid.).

It is not surprising, then, that advertising on the internet in the form of "spam," defined as unwelcome content that exhausts limited resources (be it attention or network bandwidth), experienced seemingly unstoppable success. Shortly after the internet's infancy as a means for communication between university researchers, indiscriminate spam flooded message boards and personal e-mail addresses to the frustrations of users but to the financial benefit of the spammers (Brunton, 2013). The attention economy did not negate its predecessor, however. The

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[1] These methods of movement and communication were cheap insofar as the price for the end-user of these technologies was low. This was made possible through the offsetting of the high cost by extractive and exploitative practices in mining, industry, and labor.

exchange of material goods was still the basis of neoliberal capitalism, but money flowed with attention; the two became inseparable from one another (Goldhaber, 1997).

Furthermore, the economies of the Global North were still based in the exploitation of natural resources and cheap labor. The attention economy required consumers who were plugged into various channel of digital communication. This increased the motivation to expand the reach and bandwidth of Information and Communication Technology (ICT) infrastructure, and led to skyrocketing demand for rare earth metals, plastics, and other materials necessary in the manufacturing of microelectronics. The process of extracting these resources led to a surge of devastating mining that poisoned soil and ground water, turned natural environments into giant craters, caused significant harm to the health of humans and wildlife, and spurred civil war in African nations (Taffel, 2012). These electronics are also causing environmental and human health hazards after use due to improper disposal and recycling (Perkins et al., 2014). The addition of the attention economy to industrial capitalism allowed the untenable levels of extraction and exploitation to continue uninterrupted.

This chapter explores the history of ICTs, their history, and their context in the non-profit sector. The importance of ICTs—both the virtual products and platforms as well as the physical infrastructures that enable them—to government agencies, non-government organizations, and NPOs should be contextualized against the primary costs and their secondary side-effects. This context provides a basis for understanding the dynamic that this thesis attempts to investigate, i.e. the tension between the effects of the neoliberal regime and the efforts currently acting in resistance to them.

4.1   Contextualizing Information and Communication Technologies

According to the Pew Research Center, 89% of U.S. adults use the internet with individuals between the ages of 18-29 being most likely to use the internet at 98% (2018). Another Pew study found that 77% of U.S. adults owned smart phones (2018b). Meanwhile, as early as 2011 Facebook was already ranked the second-most visited website in the world after Google (Gil de Zúñiga, 2012). Given these statistics, the benefits of utilizing the digital sphere are clear: remote access to billions of people even when they are not at home, especially young people.

Building on Gibson's work on affordances, and Beck's work on risk, Conole and Dyke provide a taxonomy of affordances that can be identified in ICTs (2004). In this taxonomy, ICTs, especially digital technology, includes positive affordances such as *accessibility*, *immediacy,* and *diversity*, which allow for access to information and communication channels that were impossible prior to the invention of near-ubiquitous online connectivity. These and other affordances are consistently referred to in the rhetoric around technology expansion, especially in areas of education. There is now a growing field of research into the benefits and costs of employing varying degrees of technology in educational institutions and class curriculums, as well as the benefits of employing technology to gain access to information that have been limited to a privileged few (Allen & Tay, 2012; Bennett et al., 2012; Hamid et al., 2015; O'Bannon, et al., 2017).

The two most important movements within the development of today's seemingly ubiquitous digital environments are "peer-to-peer" networks and "web 2.0." Web 2.0 constitutes tools that allow people who had been visitors and users to publish their own original content to a platform where so that other users may read, watch, or listen and then respond with their own

contribution (Bennet et al., 2012). Web 2.0, or "social media" as it is also called, welcomes the passive receiver into an active role, to contribute original content in the form of blog post, tweet, video, podcast, or forum post. Peer-to-peer networks are communication channels where information can move directly between users without publishing on a site acting as intermediary. Peer-to-peer networks and social media platforms helped transform the web into a public square where conversation could unfold, connections could be made, and information shared independent of traditional media systems. According to Yochai Benkler, these systems allowed users to be more independent and reduced the need for formal community in certain spaces (2012, pp. 9). Benkler argues moreover that the rise of peer-based networks and user-created content reversed the course of communication systems becoming more centralized (2012, pp. 32).

Extending beyond Web 2.0 or social media, the latest iteration of the technological zeitgeist is that of Surveillance Capitalism. In attempting to define "Big Data," Shoshana Zuboff identifies the reasoning that generates the plethora of data we create today is not purely technological but, rather, a social and economic manifestation of Marx's concept of *accumulation*, a hidden system of mass-production she calls *Surveillance Capitalism*:

> [T]he electronic text is already organized by the logic of accumulation in which it is imbedded and the conflicts inherent to that logic. The logic of accumulation organizes perception and shapes the expression of technological affordances at their roots. It is the taken-for-granted context of any business model. Its assumptions are largely tacit, and its power to shape the field of possibilities is therefore largely invisible. It defines objectives, successes, failures, and problems. It determines what is measured, and what is passed over; how resources and people are allocated and organized; who is valued in what roles;

that activities are undertaken – and to what purpose. The logic of accumulation produces its own social relations and with that its conceptions and uses of authority and power. (Zuboff, 2015, pp. 77.)

Big Data (i.e., the vast collection of information, especially tangential data from which, when taken as a whole, one may make detailed conclusions), is thus inseparable from the alienation that has been the product of industrial capitalism except, in this case, the product that is accumulated is the minutia of the individual's daily activities on various networks. The technologies employed in gathering data are built specifically to generate "its own social relations" such that constant surveillance becomes the standard mode of life in contemporary life.

4.2   Online Activity and Surveillance Capitalism

From its early developmental stages, inter-network telecommunication networks have been associated with a rhetoric of freedom and the image of a public square where "citizens" are able to gather, speak freely, organize, and create their own communities. Despite this history of language, systems of power and privilege are deeply ingrained into the design of the web and the infrastructures that enabled access to it. As ICTs are becoming the inseparable mechanisms of how western society functions, digital tools, which various organizations depend upon, may bring with them many unanticipated ethical complications due to potential biases being built into these technologies. That is, telecommunication infrastructure, database infrastructure, and algorithmic calculation that are now becoming the backbone of web-based services shape how digital tools perform their intended tasks, what affordances they offer, and what the experience of using them will entail based on when, why, and by whom they were created.

These digital products are imbued with biases and subscriptions to social ideologies that were employed in the creation of those infrastructures that preceded them. Jayson Harsin argues that, based on Foucault's concept of "regimes of truth," web 2.0 and 24/7 cultures combined with data surveillance through algorithms generates a "new kind of archive" which allowed market forces to influence individual interactions and understandings of truth (2015). Connecting political news media outlets that embraced these new diffused and social media platforms with "fragmentation, segmentation, and targeted content" constituted "truth markets" that made truth relative to the individual user being targeted with their own, algorithmically prescribed version of truth (Ibid).

Whether digital products can be used in ways that are consistent with the missions of the organization that chooses to employ them is rarely considered due to the unseen nature of such a regime—it exists as DNA, hidden in the "back end" while users interact with the polished "front end." This dualism can, for example, mask how video games popular among children are now commonly using predatory monetization schemes that mimic gambling (King & Delfabbro, 2018). Another example is data-collection, which is the core of the profit-making model for online social media platforms: data-collection may be highly intrusive, collecting information about a person's intimate details, but is typically done without the user's knowledge. The realities of these methods are often submerged from public awareness beneath User Agreements too long and abstruse for most people to read or fully comprehend. These legal documents contain the nature of how these services operate; generally, the user has free access to the service, but the company is entitled to vast amounts of data that they succeed in gathering from your activity.

Data collected from users may then be sold to marketing firms who generate targeted advertising based on this information. These firms then pay the social media platform to run these ads targeting the very users whose profiles informed the design of the ads. The creation of profiles through the extraction of data for the development of targeted ads is consistent with Beck's framework of reflexive modernity in which a "bottomless barrel" of needs and infinitely producible risks is created via the marketplace of commodities (1992, pp. 55). That is, by identifying patterns of behavior amongst users, a marketing firm, empowered by the data purchased from digital platforms such as Facebook, connects these patterns to commodities which are calculated by algorithm for certain users to more likely to perceive as needing.

These practices are not limited to only social media platforms. Nor are these practices only concerned with selling data to advertisers. Increasingly, search engines, fitness apps, music streaming services, food delivery apps, and hospitality services such as Uber are also collecting and assembling vast amounts of data on individual users (Estrin & Juels, 2016, p. 45). This data may also be collected by law enforcement and government entities such as the military or Department of Homeland Security and may be used as a basis for potentially violating the rights of people (Lyon, 2014; Patton et al., 2017). A new frontier of companies that operate in genetic testing have collected the DNA sequences of millions of customers in order to sell insights into a person's family or health. These services, too, sell data collected on customers but may also allow the service provider to turn a customer's genetic information into intellectual property.

The data that a company comes to "own" can be used to gain significant insights into the person behind the data. However, the information about customers that these companies sell is manufactured through techniques such as Artificial Intelligence (AI) or Machine Learning (ML).

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While powerful, these tools offer incomplete and, sometimes, incorrect analyses about topics they are conscripted to surveil due to flaws in the design of how this "intelligence" is trained (Crawford, 2016). The utilization of AI-based algorithms for research purposes may even counterpose ethical guidelines for areas of study where human impact can be dire (Metcalf & Crawford, 2016).

Furthermore, as the amount of data collected about citizens increases beyond the scale of human ability to understand or act upon, Machine Learning is likely to become employed in the decision-making process of local, city, state, or even national government. This system, known as Algorithmic Governance, adapts surveillance capitalism in order to exercise faster decision making on a wider range of issues all while institutionalizing potential biases built into those algorithms, putting citizen privacy at risk, making governance less transparent, and giving governing agencies heretofore unparalleled degrees of power into the lives of virtually all individuals (Danaher, 2017, pp. 3—4). Thus, the decision of which digital applications to employ or the kinds of platforms that are to be utilized is an important one for any organization whose mission may be antithetical to the purposes or the tools themselves, or counter to the interests of the people whom the organization serves.

The information and communication systems we have today are politically and economically inseparable from neoliberal policies that enable the exploitation of natural ecosystems and vulnerable communities. As outlined in section 2 of this thesis, solutions to ruinous consequences of neoliberalism frequently rely upon individual and market-based methods. However, as Iba and Sakamoto (2014) point out, "progressive and critical assessment of, or even a counter-argument to, neoliberalism may end up with the self-enactment of

neoliberalism" (p. 132). This should be acknowledged by organizations who are not the creators of those technologies but who use or intend to use these digital technologies for their own internal or external operations. It would also make sense that organizations whose missions are based in combating neoliberal policies would have a fluency of digital technology which may have been created and may now support those very policies, especially if those organizations plan to employ those technologies to support their mission.

4.3   Digital Technology and Non-Profit Communication Strategy

With the advent of increasingly commonplace digital technology, researchers have begun delving into how NPOs and humanitarian organizations are able to employ Information and Communication Technologies (ICTs) (Nunn, 1999; Bothwell & Hellen, 2015; Vangala, 2017). While ICTs constitute a wide range of tools, technologies, and systems including physical infrastructures which allow for telecommunication through phone, radio, and internet, digital online systems have become a unique topic of interest because of their widespread adoption by the general public. There is now a significant literature about how NPOs use web 2.0 tools and various social media platforms to connect with a range of stakeholders (Bortree & Seltzer, 2009; Greenberg & MacAulay, 2009; Goldkind, 2015; Raman, 2016). Put simply, social media platforms offer NPOs "a way to expand advocacy efforts by reaching new networks of community actors and by mobilizing those networks to take action" (Huo & Saxton, 2012). This is consistent with Deleuze's analysis of how market segmentation can distance individuals into "dividuals" causing loose connections (such as those that can be created in informal settings such as Facebook) to replace formal communities (Harsin, 2015, pp. 330).

There is also a growing body of academic work about *how* NPOs use these digital platforms as tools and, through empirical methods, attempt to categorize the motivations or goals for the social media activity (Algharabat et al., 2017; Obar et al., 2012; Guo & Saxton, 2012). For example, these categories may include *fundraising, lobbying,* and *market-based* approaches; respectively, these categories reflect social media activity that aims to increase donations, disseminate information about a topic relevant to the NPOs objective, and advertising services that may fund aspects of the organization's mission that is done free of charge (Nah & Saxton, 2012). Thus, increased reach and the ability to "mobilize" are described as central motivations, but the type of action that an organization may desire to come about as a result of the mobilization may differ.

While these research inquiries are important, their approach is limited to studying the NPOs strategy through the analysis of its social media activity after the fact. Furthermore, these techniques do not provide any qualitative information about the personal and organizational motivations for using social media, or any other digital media tools. Nor do these analyses do research in the context of the broader socio-political complexes within which non-profits exist (i.e., categorizing online activity of non-profits into *fundraising* or *lobbying* does not give any insight into *for what* this activity is fundraising or lobbying). These approaches fail to account for how the theoretical foundation of an organization's mission relates to the forms of digital strategy that are employed. The following sections of this chapter will examine these issues further beginning with a review of platforms and media formats that are most commonly used by non-profits that engage in promoting education around food and agriculture issues. The sections that follow will contextualize this review through primary research around stakeholders

and qualitative data collected through open-ended interviews of a food/agriculture non-profit based in New York City.

4.4   Survey of NPO Digital Platform Use

With the proliferation of web access through the Global North and in many developing nations, the use of digital platforms to disseminate information, interact with the public, and gather support has become standard practice for most non-profit organizations. Conducting a review of the types of platforms used most widely and the kinds of media that is published is helpful for better understanding the motivations and goals of these organizations, especially in the context of political history surrounding food, agriculture, and climate change. As part of the research process, a survey was conducted of various organizations and public agencies whose mission was based in sustainability, justice, or education in environmental sustainability, agriculture, and climate change. The survey involved taking stock of the variety of digital platforms employed by organizations as well as the kinds of media that were published using these platforms.

The survey was conducted through data collection while interacting with the various online media accounts and overall digital presence of several organizations. This included research of how the organization managed their digital presence on their own website (when applicable), which involved: searching the group's name in the Google search engine; visiting the their website; noting the kinds of media being published on this site; noting any application of web 2.0 protocols such as comment sections, chat rooms, and forums on said website.

Furthermore, research was also conducted into the digital activity of the organization on social media platforms (e.g., Facebook, Twitter, Instagram) that were not owned, created, or hosted by the organization. The digital strategy survey was qualitative and limited to organizations whose mission was aligned with the values espoused by the NPO that was the subject of the primary research which is covered in Chapter 5. These values are broadly defined as being supportive of the environmentalist movement, food or environmental justice, supportive of education or policy change around food, agriculture, and climate change-related topics including but not limited to agriculture, water use, local food, anti-consumption, and anti-industrialization.

The organizations included in the survey were Grow NYC; Lawn to Garden/StopWaste; National Young Farmers Coalition; Edible Schoolyard; 350.org; the New York Botanical Garden, and the Sunrise Movement. Of these seven institutions, all have websites that are owned and/or operated by the group,[2] and all seven operate accounts on the three primary social media platforms (i.e., Facebook, Twitter, and Instagram). Of the six organizations included StopWaste had a project (*Lawn to Garden*) that identified particular environmentally-focused issues separate from the organization's overall mission and did not have its own accounts on social media platforms but did have its own website separate from the organization.[3]

In addition to publishing posts (e.g., Tweets, Instagram posts, etc.), each of these organizations utilized the affordances that each platform offered in order to disseminate

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[2] www.grownyc.org; www.350.org; www.stopwaste.org; www.sunrisemovement.org; www.youngfarmers.org; www.edibleschoolyard.org

[3] www.lawntogarden.org/

information to its. readers/followers. The format that these publications took consisted of documents for educational, non-promotional purposes, which included "toolkits" and curriculums; these are freely accessible documents designed to aid the reader in the process of, for example, planning the construction of a garden or designing/implementing a school garden-based curriculum for a class. Lawn to Garden published a toolkit for mulching;[4] StopWaste created a guide for using salvaged/recycled materials in the garden;[5] and Grow NYC hosts several documents as part of a "green infrastructure" toolkit[6]. Meanwhile, Edible Schoolyard[7] and the New York Botanic Garden[8] published free garden curriculums for educators of young children and adolescents.

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[4] http://www.lawntogarden.org/sites/default/files/SheetMulch-Party-Toolkit.pdf

[5] http://www.stopwaste.org/sites/default/files/Recycled%20Content%20Guide.pdf

[6] https://www.grownyc.org/gardens/green-infrastructure-toolkit

[7] https://www.edibleschoolyardnyc.org/wp-content/uploads/2016/01/EdibleSchoolyardNYCGardenCurriculum-Grade1.pdf

[8] https://www.nybg.org/learn/schools-teachers/resources/school-gardening-101/school-gardening-101-session-1/

5. Environment Non-Profit Organization Case Study

In order to gain organizational insight into how NPOs conceive of and employ digital tools, primary research was conducted at a New York City-based NPO (henceforth referred to as "School Gardens") that supports public schools that aim to use gardens in their curriculum. This research took place while the author of this thesis was volunteering at the organization, performing simple administrative tasks and some media editing. The NPO allowed the author to use their organization as a case study. This included observing and documenting internal meetings regarding digital technology use. It would also consist of two surveys conducted with members of School Gardens staff. Additionally, the questionnaire was sent to several other non-profits that operate in food and/or agriculture. One member of an organization run by a city government agency also participated in the questionnaire.

School Gardens was the optimal organization to use as a case study for several reasons: First, its work is situated in food and agriculture education. Second, School Gardens was undergoing a shift internally around its focus that was instigated by a Theory of Change (ToC) meeting. ToC "presents a series of hypotheses about the causal connections between the program's activities, intermediate outcomes and its ultimate goals," in order to better understand the assumptions made around these goals and to achieve a more objective-based mode of programming (Walker, 2011). This meeting, led by an employee, served to help organize the intentions of the organization and, in the process, shed light on key issues that were labeled as being critical to its mission. The ToC meeting also illuminated School Garden's intention to use digital technology, and social media in particular as an important method to advance their mission through programming. Using this ToC meeting as the basis for future inquiry, a

stakeholder analysis and an open-ended questionnaire were developed in order to gain further insight into School Garden's use of digital tools. The following sections explore the results of these research methods.

5.1   Stakeholder Analysis

Freeman defined two categories of stakeholders: a) those who affect the outcome of the organization's work and b) those who are affected by the organization's work (Freeman, 1984). According to Nimwegen et al., for-profit organizations are significantly more likely to issue a statement of purpose that names stakeholders upon which the company depends rather than those who depend on the company (2008). Because this thesis aims to uncover insight into how non-profit organizations use digital tools to further their mission, it was important to understand for whom these organizations were working and to what end. Therefore, a stakeholder analysis was employed to investigate which stakeholder groups were the beneficiaries of the case study organization. The results were then compared to the literature issued by the case study organization in their statement of purpose, as well as to the statements issued by similar organizations.

The case study organization named five different groups in their mission statement: *schools, community, students, New York City,* and *children*. "Students" were mentioned three times, "community" and "children" twice, and "schools" and "New York City" only once each. This is consistent with the stakeholder analysis that was conducted with the director of the organization as well as the manager of the organization's educational programming, which identified *students*, *parents*, and *teachers* as the primary stakeholders in need of the work that the organization does and the stakeholders most likely to benefit from said work.

Government agencies and administrative boards in the education system were also identified as stakeholders upon which the organization depends for the success of their mission. Their role as stakeholders was related to their capacity to assist or obstruction School Gardens' objectives. For example, the Department of Education was regarded as a supporter because grants enable School Garden to finance its work, the entirety of which was done at no cost to the schools that participated in the programming. However, school administration, the Department of Parks, and the Department of Public Housing were described as both supporters and occasional obstacles.

The tools and strategies that the organization uses for advertising programs, recruiting volunteers, garnering attention visibility, and facilitating a network of community members reflects how the members of the organization perceive the utility that these tools affords them. The case-study organization is a non-profit with a unique set of stakeholders and a mission that attempts to play a part in the food justice movement that, as La Via Campesina has stated, uses "social movements" as a tool to demand change (2012, pp. 11). To understand how an organization approaches social movements toolkits, a questionnaire was created about how members of this organization view digital tools such as social media, online media publication, and other web-based resources for communication, event organization, and information dissemination. The following sections delve into this study and the results.

5.2   Questionnaire Results – Views, Beliefs, and Uses of Digital Tools

The response from staff of School Gardens encompassed a focus on serving one of their primary beneficiaries identified in the stakeholder analysis: members of a school-based initiative to build, maintain, and use gardens on school grounds for educationally-related programming.

While the stakeholder analysis names students and parents as primary stakeholders, the group most directly found in the questionnaire response was school staff. This is true across the board for the questions posed and the various School Gardens staff surveyed.

Roughly half of the questions in the survey had responses pertaining to increasing access to various "resources." Based on the ToC meeting School Gardens held, these resources can be broken up into three categories: *Giveaways* (e.g., financial grants or physical materials for garden construction/maintenance)*, Educational* (e.g., workshops, instructional videos, and in-class curriculum resources), and *Community Network Building*. Although students were rarely mentioned in the responses, the emphasis on increasing school access to resources points to a mission that benefits students and parents as a result of the relationships and communications that take place between School Gardens and school staff.

Virtually all responses that responded to questions about "social media" emphasized the popularity of social media platforms as the primary characteristic for using one over another. For example, Instagram was named the most popular platform among their user-base and, therefore, the preferred tool for sharing information. However, other affordances were identified in their digital strategy: a low barrier of entry, fungible content that is easily distributed between the three main platforms (Instagram, Facebook, and Twitter), and increased visibility were also named, suggesting that increasing the reach of their communication without having to commit excessive resources is integral to their digital strategy. In accordance with the motivation to increase reach, the director of School Gardens listed the diversity of their stakeholders as well as the diversity of information being shared as motivators for their use of popular and easily-accessible social media platforms.

While social media's affordance for reaching diverse stakeholders is seen as key to their mission, School Gardens also emphasized the desire for an active online community of educators and gardeners that "mirrors the offline community." This includes seeing what members of the offline community are discussing, and sharing resources, which is consistent with the findings of Quintina and Morales (2015) who found that a listerv operated for sharing resources provided an avenue for developing leadership in local agriculture communities. While School Gardens' goals include these forms of online activity, they struggle to kindle conversation within these online spaces without facilitation from School Gardens staff or volunteers. For the most part, responses describe communication on social media platforms as being unidirectional, happening directly between School Gardens and an individual stakeholder, discussing events that School Gardens hosted or plans to host.

The events that School Gardens hosts are one of School Gardens most important aspects, according to the questionnaire responses, because they are opportunities for direct instruction and skill development – a core component of School Gardens' mission. School Gardens attempted to make these events as accessible as possible for their membership by holding identical events at varying times and in different boroughs. However, their online presence was considered an aid in filling in gaps of their attempts to widen to in-person events. In addition to publishing and cross-posting[9] written content, School Gardens was also creating original video content that was intended to teach viewers about gardening techniques such as preparing a garden for cold winter months. These videos were, at times, produced during the in-person

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[9] Cross-posting is taking content that was published on one social media site or sent to a particular group, sometimes by another organization, and publishing it through other communication channels in order to expand its reach

training events, thus taking the material out of the live context and delivering it to the segment

of their membership who could not attend.

6. Conclusion

This thesis began with an overview of the environmental consequences of industrial capitalism, inequality of risk and access, the destruction of local traditions and communities, and the class and race-based injustice on which neoliberalism is built. This laid out the foundation of exploitative capitalism at the industrial stage and the repercussions that it has wrought. In Chapter 3, knowledge-building is identified as one technique used for gaining and exerting control in social and cultural spheres – control that is necessary for the sort of encompassing and rapacious hegemony of the contemporary neoliberal industrial complex, which produced the repercussions described in the preceding chapter. Education, a tool for knowledge-building, can also be used to create a social consciousness that resists the tenants of industrial capitalism, and NPOs frequently employ informal education in this way. The work done by organizations with missions to counteract environmentally destructive policy use these informal educational settings to engage people with issues such as food production, waste reduction, and agricultural knowledge. The most common educational method for these NPOs has become ICTs, digital technology, and social media.

In Chapter 4, these technologies and virtual environments are explicated, beginning with their early development and how their creation depended on the exploitation that was made possible by exhaustive capitalist extraction of natural materials and labor time. These technologies would then become complicit in granting government and corporate entities vast levels of access and influence over how individuals and communities existed, related to one another, and made subservient to free-market ideologies. Despite this history, the affordances of digital technology, due to their ubiquity, make their use necessary even for those NPOs seeking

to resist or undermine the neoliberal regime. The ubiquity of digital technology also allowed for groups with the requisite skills to create their own tools for facilitating community-based organization and action, or to adapt existing tools for this purpose. Looking at NPOs working in community development through food and agriculture, the primary tools adapted in this way were social media platforms, information publication tools such as blogs or newsletters, and website utilizing features, such as interactive calendars, that promoted local in-person events.

In addition to a survey of publicly available content from various NPOs, a case study was executed to investigate the internal communication and strategy around these technologies at a New York City-based non-profit, "School Gardens." School Gardens' mission is to build capacity for educators to create on-site natural gardens and to use these spaces as experiential learning environments. Their work includes skill-building through in-person training sessions, grants and giveaways of free materials, and support for educators, school administration, and parents to generate stakeholders for the garden. The case study used information-gathering during their operations including a Theory of Change meeting that explicated their mission, a stakeholder analysis, and a qualitative interview with staff members. One interview was also conducted with an associate from a city-run program that worked closely with School Gardens. This research examined how the organization conceptualized the utility of digital technologies, how these technologies related to their mission, and how those relationships reflected on the broader position of their organization in the context of resistance to industrial neoliberalism.

6.1   Rebuilding the Public Sphere through Community Building

How communities create and access information is directly tied to the formation of cultural knowledge, which is itself connected to forms of social hegemonies that promote the

propagation of knowledge through technologies of control. The social regime that holds comprehensive power in contemporary society is undeniably neoliberal capitalism. Neoliberalism and the economic, political, industrial, and agricultural shifts that have led to the neoliberal regime are responsible for polluting natural ecosystems, exploiting human labor, and devastating local food pathways and economies. Provided how these phenomena interlock and magnify their destructive effects, it is no surprise that communities around the globe are now fighting the symptoms of this regime as well as the regime itself.

The construction of knowledge relies on education as a means for the institutionalization of ideological tenants in social and political spheres. That is why it is critical to investigate how education is practiced, especially on topics that change people's perception on issues like global warming, which put all life on the planet in peril. Since the early environmentalist movement of the 1970's, resistance to industrial capitalism is increasingly found in public and private discourse on food and agriculture.

Discourse alone is insufficient to translate resistance into practical change at structural levels. Community-oriented organizations that build capacity for action have attained some levels of change. However, sustained community action is not possible without the education of the public. This is where digital technology becomes an essential component of resistance to structures of power: the affordances of the internet, ICTs, and social media make them uniquely appealing for organizations with limited resources, i.e. accessibility to stakeholders, affordability, wide reach across distances, ease-of-use, and immediacy of contact with the public.

For the Farmer's Market Coalition and its use of listservs for capacity-building, success was evident. Meanwhile, School Gardens found their digital strategy was not as rewarding. While their direct support initiatives (e.g., training workshops, grants, and material giveaways) succeed in connecting school staff with much needed resources, activity on social media was limited to simple responses to content published by School Gardens. The reason for this is likely a combination of the role these tools play in broader social spheres and the implicit objectives of organizations who use these tools to shift public discourse. The next section will argue that School Gardens is in a critical position to support the resistance of industrialized agricultural production through digital networks even as their digital communications strategy has limited success in activating a user-centered community of educators and environmentalist.

6.2   Education to Shift Public Discourse – Playing Their Part

According to Holt-Giménez (2015), NPOs are critical to rebuilding the public sphere that neoliberal policy had systemically atomized, and the rebuilding of the public sphere is done through collective action oriented around environmental sustainability. It follows, then, that organizations who wish to resist neoliberalism and the industrialized, free-market exploitation of nature would enable collective action; They would foster connectivity between community members in place of action in silos, encourage independent collaboration in place of organizational hierarchies, and advocate for local knowledge sharing and skill building in lieu of relying on "experts" whose work is informed and funded by corporate entities. Schools are where, according to Freire and Curle, these transformations must occur for society to change.

The work of a non-profit operating in the public education system is complicated by the various stakeholders found within that system. This includes teachers, school admins, and staff

who desire gardens and need support; parents who desire the benefits of experiential education or exposure to natural environments for their children; the students themselves who have little power in choosing their educational circumstances, and for whom exposure to natural environments (or lack thereof) can dictate their beliefs as they develop. Moreover, there are the NPO staff who have their own interests and perspectives on the various issues that their work touches on, city agencies, volunteers, donors, neighborhood residents, and other NPOs who all impact the work of School Gardens.

The mission of School Gardens is to support educators and staff to implement natural environments into the school curriculum while simultaneously connecting educators, garden specialists, and local community leaders. This kind of education reform is consistent with Freire's and Curle's plea to move away from traditional hierarchical educational systems. Without the support of the various stakeholders mentioned above, School Gardens could not accomplish this feat. Their success requires a diffuse web of support where teachers, admins, city agencies, and others identify with a component of the School Gardens mission.

To attain this level of buy-in, their work must be established in a cultural movement whose affordances are apparent to a range of individuals and communities. For School Gardens, their established culture is education reform with an environmentalist lens, and the affordances therein are inseparable from resisting industrialized agricultural capitalism. Specifically, the affordances of School Gardens' mission are located in the struggle to stabilize global climate by regaining control, or sovereignty, over agriculture.

NPOs such as Young Farmers Coalition or La Via Campesina participate in this movement by building capacity and advocating for agricultural workers and small producers. School Gardens, on the other hand, operates in proximity to these organizations by creating networks of support for agricultural regime change. Allowing individuals to access education on issues pertaining to environmentally-friendly beliefs (e.g., food, waste, agriculture) introduces resistance to industrial capitalism as a normative claim in cultural spheres. Once public knowledge shifts around environmentalism, racial justice, and the neoliberal industrial complex, communities can begin to form around these issues. These communities are then capable of collective action. These kinds of communities are, as Quintana and Morales found (2015), made possible through member-based capacity building using digital tools which make communication, organization, and skill-sharing easy, affordable, and self-directed.

Digital technology allows for self-directed communities to form around shared beliefs even as those same technologies dissolved the social structures of previous generations. The affordances of various communication platforms permitted certain communities to flourish in digital spaces. As information about human-made climate change becomes increasingly bleak, more widely available, and difficult to reject, the individualistic effect of neoliberalism sparks a wave of individuals expressing dissatisfaction with the status quo, often shared on social media. Individual action, such as "green" consumerism, expresses neoliberal ideologies whereas collective action rejects those ideologies. And the education of the public is a necessary ingredient for sustained collective action organized around resistance to existing structures of power.

## 6.3	Suggestion for Further Research

The research undertaken here was limited to non-profit organizations in food and agriculture-based education and their use of digital tools in the context of neoliberalism and industrialized capitalism. To better understand the function of using digital technology as a tool for resisting these systems of control, further research would do well to investigate how more explicit resistance occurs in digital spaces, or what place there is for digital technology in the strategies of activist movements such as Black Lives Matter, as well as anarchist groups engaged in community-organizing. These groups are, too varying degrees, just as interested in education as they are about activating individuals to become part of public resistance movements that are explicitly revolutionary.

An important component of this thesis was understanding the role of education in shaping social spheres of knowing and the potential of using education. When done not in support or conformity to larger structural regimes of power but, rather, in resistance to those regimes, education can play an integral role in fostering the potential for communities where active resistance may occur. Looking further into revolutionary forms of education, especially from radical feminist perspectives that attempt to deconstruct patriarchal systems of oppression would also benefit further research into the themes presented here.

Appendices.

1. **Survey Regarding Organization Stakeholders:**

   A. Please list the stakeholder groups that you believe are **in need of** the work that your organization does.
   B. Please list the stakeholder groups that you believe are **needed for the success of** the work that your organization does.
   C. Please list the stakeholder groups that you believe **have power to impact** the work that your organization does **either positively or negatively**.
   D. Please list the stakeholder groups that you believe **will benefit from** the work that your organization does.

2. Stakeholder Map

In the diagram below, the three circles represent the proximity of stakeholders in relation to the organization's mission. Stakeholders closest to the center are essential to the success of the organization's mission; The further the placement is from the center, the less critical that stakeholder is to the organization's mission. **Please, place the stakeholder groups within the areas that you believe are most accurate.**

Mission Success
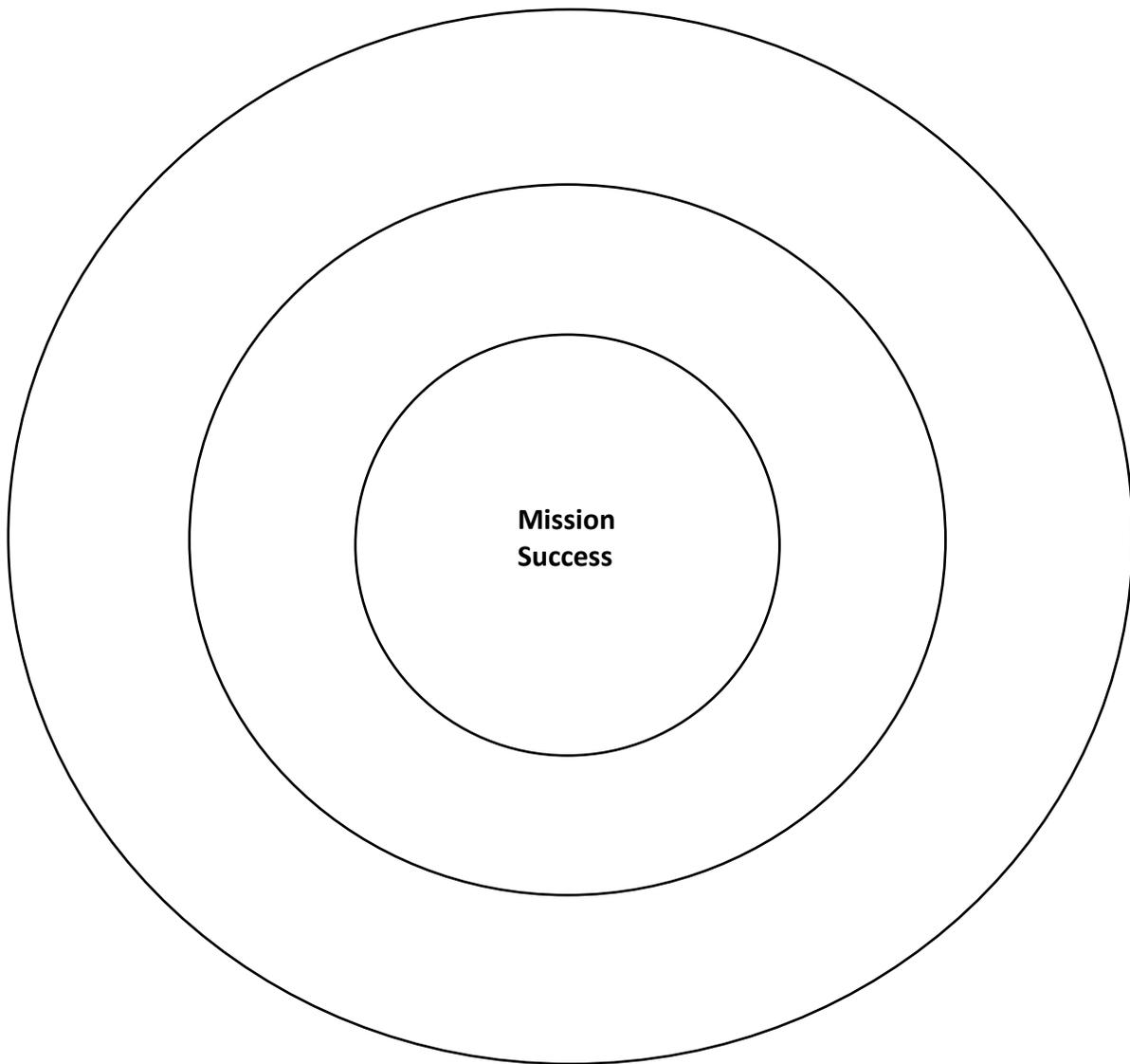
3. Digital Strategy Approach Interview Questions

1. How would you describe your organization's mission?
2. What do you believe are the short-term and long-term goals of your organization?
3. What role does social media play in your organization's mission?
4. When choosing to publish material online, what, if any, motivation is there in using one social media platform over another (e.g., Facebook, Instagram, Twitter, etc.)
5. How would you describe the dialogue that takes place on your social media accounts?
6. Does your organization create and distribute any educational materials? If so, what kinds? How would you describe the role they play?
7. Does your organization create digital products that can be used by the public?
8. In your view, is politics an important topic for those who engage with your organization? Does this influence your organization's mission?

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