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'Biotechnologizing' or 'democratizing'? Unraveling the diversity of resistance to GMOs in Guatemala

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Abstract

Until 2019, Guatemala upheld a de-facto moratorium on GMOs. The ban has been attributed to broad-based social resistance and the unlikely alliances galvanized by the issue. Recent legislation, however, has been met with little resistance. In this paper, I show how the tensions between anti-GM actors and their interactions on the ground help to explain this turn of events in Guatemala, and—more broadly— contributes to our understanding of how biotechnology advances despite significant resistance. Drawing on interviews and ethnographic observation, I demonstrate how urban, professional class *Ladinos* who oppose GMOs draw on scientific and technical arguments divorced from broader political-economic critiques. Meanwhile, *campesino* and indigenous activists center their resistance within broader structures of oppression such as colonialism, racism, and capitalism. Specifically, I show how 'biotechnologizing' is employed in problematic ways, not only by pro-GMO coalitions—as other scholarship suggests—but also by anti-GM allies. This case contributes to our understanding of how anti-GMO movement frames get constructed in local contexts, and the tensions that arise between anti-GM groups, revealing significant impediments to creating a more just food future in Guatemala.

Keywords: Genetically modified organisms; alternative food movements; food sovereignty; Guatemala; social movements; scientism; peasant social movements

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Introduction

On September 2, 2014, an estimated 120,000 protestors halted traffic on Guatemala's Pan-American Highway to demand the repeal of a new law permitting genetically modified (GM) seeds in Guatemalan markets. A month later Congress repealed the law, signaling a remarkable victory for protestors. The success of the protests was attributed to the way the movement drew together unusual allies, uniquely transcending age, class, ethnic, and geographic divides that otherwise pervade society. Guatemalan scholars hailed the victory as an opening for democracy and an awakening of the dormant power of civil society (Grandia, 2017). Five years later, however, a new regulation took effect which allows for the importation, commercialization, and planting of GM seeds. A small group of activists filed a complaint with the constitutional court and were granted a temporary suspension, but their appeal was ultimately overturned (Expediente 6767-2019). This decision has thus far not generated mass mobilizations. This leaves unanswered questions about why diverse actors coalesce around the issue of genetically modified organisms (GMOs) and what impediments they face in demonstrating long-term, transformative change.

GMOs, rather than simply a technology that produces higher or better yields, fundamentally alter the relations of production (Kloppenburg, 2010; Yapa, 1993). Like any privatized seed, GMOs must be purchased perennially rather than saved and reproduced freely from year to year. Some GM plants, like those modified to be herbicide-resistant, require the increased application of agro-chemicals. By these means, and the threat of self-pollination with native varieties inherent to some GM crops, GMOs can degrade biological diversity. Scholars have considered GMOs an instance of "accumulation by dispossession" (Harvey, 2003) because they simultaneously dispossess farmers from their means of production and open a new path for capital accumulation. Thus as Kloppenburg (2010) writes, "Who controls the seed gains a substantial measure of control over the shape of the entire food system" (p. 368). Genetically engineered seeds are a unique battleground with exceptionally high stakes.

GMOs has been heavily theorized. In their work on food regimes, Friedmann and McMichael (1989) trace how capitalism, the state, industry, and agriculture have co-evolved. Pechlaner and Otero (2010) have labeled our current food regime the "neoliberal food regime", calling attention to the way our food system has been reshaped by neoliberalism—a set of practices based on the belief that "human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills" (Harvey, 2005 p. 2) within a system of strong private-property rights, free-market, and free trade. Trade agreements and global legal frameworks are increasingly important tools facilitating the corporate capture of genetic diversity (Kloppenberg, 2014; Felicien et al., 2018). For the way GM crops are patented on behalf of transnational corporations and facilitated by global politics, they have been framed as central to the neoliberal food regime and been called the "sharpest technological expression of the neoliberal food regime" (Otero & Lapegna, 2016, p. 671).

Because GMOs are illustrative of neoliberalization and accumulation by dispossession, they tend to be conceptualized from this lens. This gaze also permeates scholarship about anti-GMO social movements. Specifically in the global South, mobilizations against GMOs are often framed as antithetical to these processes—as anti-neoliberal and anti-capitalist. Dominant explanations of GMO resistance shed light on various aspects of these movements, but they cohere in their baseline assumption that actors mobilize against GMOs as a response to neoliberal encroachment. This framing accurately describes why some actors resist the technology. However, as others have pointed out, agrarian social movements are far from homogenous (Lapegna, 2014; Müller, 2006).

Diverse critiques of GMOs and repertoires of protests have been identified (Scoones, 2008; Wainwright & Mercer, 2008). The framing of opposition can take on many forms, both narrow and wide (Scoones, 2008). At the narrow end of GMO critiques, scholars have identified a reformist, "biosafety" framing, that reduces the issue to scientific or technical criteria, rather than the livelihood concerns of rural communities, property rights, or unequal power relations (Kinchy et al., 2008; Levidow & Carr, 1997). Rather than anti-neoliberal or anti-capitalist, this discursive framing privileges the role of experts and can marginalize broader socio-economic critiques of the technology. This problem framing is so resonant, Levidow (1998) coined the term "biotechnologizing" to describe these approaches.

Biotechnologizing, however, is most often described as a technique of governance, rather than a social movement frame. Governments or scientists who biotechnologize have a pro-GMO agenda and clear political and material interests. They biotechnologize to coercive ends—to co-opt more radical goals of social movement actors. What deserves attention, I argue, are the ways biotechnologizing can be employed in a problematic way, not only by pro-GMO coalitions, but also by anti-GM allies. Rather than a deliberate attempt to channel dissent, well-intentioned "expert" social movement actors can also derail the broader goals of less powerful movement allies. Extending the concept of biotechnologizing can help explain tensions that exist within anti-GMO social movements, and the unfulfilled achievements of once celebrated movements—like in Guatemala.

Guatemala is a rich case for asking: Why do people contest GMOs? How are movement dynamics shaped by local considerations and contexts? What tensions arise when movement logics are diverse? How might tensions impact the movement's ability to challenge the dominant agri-food paradigm? In the paper that follows, I first present dominant theories about GMO debates as a struggle over capitalist expansion and neoliberalism. I then review a smaller body of science and technology studies (STS) scholarship which complicates this framing. Drawing on this scholarship, I use interviews and ethnographic observation to show how experts employ "technical" discourses to describe their resistance to aspects of GMOs, aligning themselves with the rule of law, science, and common sense. Rather than being a rejection of capitalist logic or

anti-neoliberal, this discourse frames the issue as primarily one of "biosafety,"[1] amenable to technocratic reforms. This perspective stands in stark contrast to Indigenous and *campesino* activists who articulate their resistance within a broader, anti-neoliberal struggle.

Reproaching the neoliberal food regime

In this section I review three distinct but interrelated dominant characterizations of anti-GMO struggles: 1) struggles for "seed sovereignty"; 2) reactionary "double movements"; 3) and expressions of "moral economy". These existing explanations shed light on various aspects of anti-GMO social movements, but cohere in framing movements as a reproach of the neoliberal food regime. Following a review of these explanations, I suggest limitations to the dominant narrative.

Consistent with the dominant framing of GMOs as a process of accumulation by dispossession typical of the neoliberal food regime, scholars have often described anti-GMO social movements as a struggle against these processes. Jack Kloppenberg, who has written extensively on the topic of agricultural biotechnology, employs this framing. He writes, "The seed has become a key nexus in awareness of and opposition to the neoliberal project of restructuring the social and natural worlds around the narrow logic of the market" (Kloppenburg, 2014, p.1233). From this perspective, anti-GMO struggles correspond with what transnational peasant networks (TPNs) like La Vía Campesina have called struggles for "seed sovereignty" (Müller, 2020; Peschard & Randeria, 2019). These organizations define seed sovereignty as the right to plant, share, and breed new plant varieties with existing seeds, and are diametrically opposed to both intellectual property rights and GMOs on these grounds (Kloppenburg, 2014).

There is good reason to read anti-GMO movements as struggles for seed sovereignty. For La Via Campesina, which emerged in the 1990s in direct response to the globalization of agriculture (Edelman, 2014), GMOs are just one battleground in the larger struggle against globalization, commodification, and neoliberalism. Across Latin America, peasant organizations have drawn on TPN discourse to contest GMOs and other extractive projects (Escobar & Fitting, 2016; Fitting, 2014; Klepek, 2012; Motta, 2014). GMOs therefore often serve as a specific link to anti-globalization, anti-trade, anti-neoliberalism, and other transnational movements and struggles. While the seed sovereignty framing may help to explain peasant and Indigenous resistance to GMOs, scholars have issued caution about relying too heavily on transnational movements to explain national-level manifestations (Baletti et al., 2008; Borras Jr., 2010; Lapegna, 2014). Arguments that make universalizing claims about seed sovereignty fail to account for the heterogeneity of actors who are often represented in anti-GMO movements.

[1] Biosafety is one aspect of GMO regulation focussed on ameliorating the threat of genetic contamination. Biosafety concerns focus on the safe transport, tracking and handling of genetically modified seeds, rather than the logic of genetic modification more generally (UNEP N.d.)

In light of these diverse, large-scale movements, many scholars have drawn on Karl Polanyi's (1944) concept of "double movement" to help explain GMO resistance (Carroll, 2016; Levien, 2007; Wittman, 2009). Double movement describes a dialectic pattern of unregulated capital accumulation followed by reactionary counter movements. Polanyi describes how trying to embed the natural environment into markets often has deleterious effects, triggering society to act in self-protection (Polanyi, 1944). Polanyi (1944) notes that counter-movements will include "support of those most immediately affected by the deleterious actions of the market—primarily, but not exclusively, the working and landed classes" (p. 138). Polanyi is less interested in which class takes the lead in social movements, as in all cases movements are not motivated by self-interest but "out of the functional need for society to protect itself" (Levien, 2007, p. 125). The concept of double movement helps to account for the broad alliances which have formed to contest GMOs because, as Carroll (2016) concludes, "Self-protection does not need to be part of a deeply held commitment to radical transformation. It can just as easily come as a reaction to the potentially adverse environmental and safety consequences of treating nature like a commodity" (p. 19).

Polanyi, however, describes counter-movements as emerging mechanically and spontaneously, neglecting how movements are organized and how people differently affected by the deleterious effects of the market are brought together around a political project (Levien, 2007). Some scholars have filled in these gaps drawing on the concept of "moral economy" (Scott, 1976; Thompson, 1963) to explain how diverse actors coalesce around the issue of GMOs. Moral economy describes how cultural norms guide economic life, often even at the expense of profit. Intra and interclass reciprocal relations over time produce widely held conceptions of justice or right action, about market relations, but also about the optimal organization of society more broadly (Edelman, 2005; Scott, 1976; Wolford, 2005). The concept of moral economy helps to explain how counter-movements, rather than emerging spontaneously, are constructed from these arrangements and ideologies.

Theories of moral economy have been influential in explaining GMO social movements in Latin America, highlighting the ways they threaten cultural and traditional lifeways. Latin American activists draw on maize as a symbol of place-specific material and moral significance (Fitting, 2010; Fitting, 2014; Grandia, 2017; Klepek, 2012). Klepek (2012) describes how the perceived threat of GMOs to traditional seed saving and exchange has shaped popular concern over the technology in Guatemala. Fitting (2014) describes how campaigns against GMOs in Mexico and Colombia highlight the cultural meaning of maize and by doing so "generate solidarity among different types of groups and individuals" (p. 176). Grandia (2017), expressly attributes the protestors' motivation and success to a moral economy of maize. She writes, "The material, moral, and emotional significance of maize helped galvanize and motivate people who may have never been politically active to make comments or take direction against Monsanto…. Maize prices, maize seed, and maize markets are issues around which thousands of Guatemalans—from both the political right and the left—can mobilize against the injustices they perceive from neoliberalism writ large" (Grandia, 2017, p. 78-79). In this quote, Grandia outlines

the role of moral economy while conjuring a depiction of a Polanyian double movement against injustices "writ large," invoking a struggle against neoliberalism. While this research also finds moral economy useful when analyzing campesino and Indigenous opposition to GM crops in Guatemala, I argue it is less salient for explaining the participation of middle-class and expert actors.

Here I treat these explanations (seed sovereignty, double movement, and moral economy) separately, however, they are often used simultaneously to explain different aspects of the same movement. While each explanation sheds a different light on GMO resistance, they cohere in their baseline assumption that actors mobilize against GMOs as a reproach of the encroaching neoliberal food regime—whether expressly anti-neoliberal as TPNs articulate, a more abstracted threat in the Polanyian sense, or in an explicit defense of culture.

Science, scientism, and biotechnologizing

In contrast to the dominant characterization, in which anti-GMO movements in the global South are assigned a broad anti-neoliberal motive, some framings of the GMO problematic are quite narrow and may work at cross-purposes with wider-ranging movement goals. Here I review a smaller body of STS scholarship about the "biotechnologizing" of GMO debates and explain how this study moves this work forward.

There are many anti-GMO activists whose concerns are specific to the technology or aspects of it. Writing about one of the first widely publicized GMO disputes in Latin America, Wainwright and Mercer (2008) describe how debates in Mexico became narrowly fixated on the gene "scale of criticism". Following Quist and Chapela's (2001) discovery of transgenic DNA in native maize landraces, scientists set out to disprove their findings, to specify the likelihood of introgression, and to debate the reliability of certain data—producing scientific fodder for both sides. Activists involved in the Network in Defense of Maize, an heterogenous group of NGOs, Indigenous community organizations, researchers and campesino groups, emulated this discourse, couching their critiques in terms of "biosafety" and introgression (Kinchy, 2012). While this framing does not encapsulate the range of Mexican activists' concerns, the terrain of the debates in Mexico were significantly shaped by these high-profile scientific debates—circumscribing the space for activists.

This resonates with what other scholars have shown about biosafety. Since the passage of the Cartagena Biosafety Protocol in 2003, countries have more room to regulate trade without proof they cause harm, in the name of environmental protection (Kinchy 2012). By focussing solely on biosafety, however, the Protocol legitimizes only a small subset of concerns about GMOs—those that constitute threats to biodiversity and can be assessed through scientific analysis (Kinchy, 2012). This framing privileges the role of scientific knowledge and can marginalize broader socioeconomic critiques of the technology (Andreé, 1997; Kinchy, 2012; Levidow, 1998; Wynne, 2001).

The Protocol also encourages public participation in crafting national biosafety regulation, following broader trends toward "democratizing technology" (Levidow, 1998). While public participation in biosafety debates can create new opportunities to voice critiques, scholars have shown how the potential of such exercises are limited by a narrow problem-definition of risk and safety. Rather than open debate to broader questions, for example whether to allow GMOs, emphasis is placed on how to anticipate, prevent, or ameliorate potential negative effects of new technology. By focussing participatory exercises on risk management, they presuppose technocratic policy solutions. Les Levidow (1998) coined the term "biotechnologizing democracy" as opposed to "democratizing biotechnology," to describe how scientific or technical discourse restricts "debate to a pre-defined set of scenarios about biotech futures rather than engage broader social and ethical concerns" (Newell, 2009, p. 365).

Biotechnologizing represents one instance of the scientization of politics—the increasing prominence of science-based technology regulation within the context of neoliberalization (Moore et al., 2011). Scientism, the ideology that helps drive this process, assumes policy is best dictated by scientific reasoning, since science is presumed to be apolitical, "transcend human values and interests and to provide objective answers upon which all can agree" (Kinchy et al., 2008, p. 156). The emphasis of this scholarship is the way states, scientists, and corporate elites set agendas, frame problems, and "biotechnologize democracy." In other words, scientization is a "strategic political project, pursued by actors who stand to gain by constructing matters of social significance in a narrowly technical way" (Kinchy, 2012, p. 32). Rather than a social movement frame, biotechnologizing is a technique of governance to foreclose debate. In the case where social movement actors employ scientific or technical framing, it's because they are forced to accept the terms of the debate set by the pro-GMO position, not because this logic is endemic to the movement (Scoones, 2008; Kinchy, 2012). In the case of Guatemala, I argue that biotechnologizing can be employed in problematic ways, not only by pro-GMO coalitions, but also by anti-GMO allies.

Methods

To understand this complexity of resistance to GMOs in Guatemala, I draw on qualitative data collected over a two-month period in 2018 and 2019, including twenty hours of ethnographic observations and twenty-one in-depth, semi-structured interviews.[2] Many individuals I interviewed were also participants in meetings and events I observed. This mix of qualitative methods allowed me to gain an understanding of how diverse actors articulate their resistance to GMOs when asked in a confidential interview, how they discussed them amongst groups of

[2] All interviews took place in 2018 and conducted in person, except for one which was conducted over Skype. Interviews were conducted in Spanish, lasted up to two hours, and were audio-recorded. All quotes used are from my own data which I translated from Spanish to English. Participants have been given pseudonyms.

similarly situated actors, as well as how they negotiated these opinions with actors who have diverging opinions and social identities.

This paper draws most heavily on interview data with individuals who have been active in resisting GMOs—who either participated in street protests, published formal denouncements, or otherwise publicly expressed their resistance to the Monsanto Law in 2014. Interview participants included academics, Indigenous leaders, environmentalists, government actors, agronomists, and *campesinos*. In the results section, I use two primary categories to organize these actors. I term one group "experts," which includes professors, government actors, and agronomists—in other words, "credentialed experts" (Williams & Moore, 2019), people with formal degrees, or formal job titles. The term expert also describes the way credentials allowed these actors to weigh in on GMO debates in ways the lay public would not. This category describes eleven of the participants, the majority of whom also identify as *Ladino*, signaling their non-Indigenous or mixed Indigenous and European ancestry, and are urban residents. The other ten participants I categorize as *campesinos.* These actors primarily identify as *campesino* or Indigenous and draw on this identity to describe their opinions about GMOs. In a few cases, these categories are not entirely discrete. For example, some activists who represent the Network for the Defense of Food Sovereignty, made up of largely Indigenous campesino members, are also professional agronomists. However, given their affiliation with activist networks, they are not ascribed expert status. Thus, I use the category "expert," not to reify their superior knowledge, but to describe the way actors were empowered or disempowered in their interactions with others. Further, categorial divides such as *Ladino*/Indigenous, urban/rural, while crude, have both historical significance and contemporary salience—as I attempt to make clear.

Genetically modified organisms in Guatemala

Guatemala and Southern Mexico are the birthplace of and contemporary centre of maize genetic diversity, a plant whose remarkable role in the world economy is well documented (Kloppenberg, 2005; Warman & Westrate, 2003). Genetic diversity in the world's major food crops is critical to global food supply, hence as Isakson (2009) argues, "the cultivation of agrobiodiversity and, consequently, global food security, is contingent upon the 'food sovereignty' of peasant farmers" in places like Guatemala (Isakson, 2009, p. 726). Perhaps because of these high stakes, the impacts and potential threats of genetic engineering in Guatemala have long been forewarned and theorized (Grandia, 2014; Klepek, 2011, 2012; Soleri et al., 2005).

Guatemala has largely followed broader trends towards neoliberal agricultural restructuring, including the dismantling of state institutions and interventions, characteristic of much of Latin America since the 1980s (Copeland, 2019; Isakson, 2014). In combination with other forces, this neoliberal restructuring has resulted in some of the highest levels of food

insecurity in the western hemisphere, increasing reliance on foreign aid and international cooperation (Food and Agriculture Organization of the United Nations [FAO], 2014; World Food Program, 2017). The thirsty-six year civil conflict, which formally ended with the 1996 peace accords, left many Indigenous communities devastated (Handy, 1984). The roughly two decades that have passed since have been marked by an "internationally assisted transition to multicultural free-market democracy" (Copeland, 2014, p. 305). In contrast to Bolivia and Ecuador (other Latin American countries with large Indigenous populations) who have made significant inroads to challenging neoliberal regimes, Indigenous politics in Guatemala have been characterized as divisive and powerless (Copeland, 2014). Some attribute these circumstances to the Peace Accords which awarded minimal new rights to the country's Indigenous population. These rights were mostly relegated to arenas like education and language, eschewing larger economic and structural reform (Hale, 2002; 2005). This palatable form of multiculturalism has pacified some, diminishing more leftist Mayan movements and ultimately limiting their potential (Hale, 2002; 2005). As Klepek (2012) has pointed out, however, the danger in "focussing solely on the fragmentation of past and contemporary Guatemala social movements is ignoring evidence of and possibilities for more transformative agrarian (and other) politics" (p. 314).

Anti-GMO mobilization is one arena where this hope of transformation is apparent. Initial activism in Guatemala took off after Quist and Chapela (2001) detected transgenic DNA in native maize landraces in neighboring Mexico. Early forms of resistance emerged from far left, politically engaged Mayan leaders and a bourgeoning network of organizations united as the Network for the Defense of Food Sovereignty (REDSAG). This resistance was embroiled in debates about transgenic maize and soy arriving as food aid from the United States, and larger conversations about the management of biodiversity, promoted by the United Nations (Klepek, 2012). Guatemala first proposed a draft law to allow GMOs in 2006, based on the Union for the Protection of New Plant Varieties (UPOV), an international convention that codifies intellectual property for plant breeders—a requirement of the Central American Free Trade Agreement (CAFTA) with the United States. This attempt was met with resistance and legislative failings (Klepek, 2012).

In July 2014, the Guatemalan Congress passed a law named the Law for the Protection of New Plant Varieties (Grandia, 2017). The law prohibited the replanting, transportation, or selling of privatized seeds without permission, and would have made these actions punishable by a fine of Q1000–10,000 ($130–$1,300) and up to four years in prison. The law included text regarding the handling, transport, and use of GMOs, paving the entrance for GM seed to Guatemalan markets. The law was nicknamed *la ley Monsanto* (the Monsanto Law) and word spread over the next two months, culminating in a protest on September 2, 2014 when an estimated 120,000 protestors took to the streets. Under intense criticism, Congress voted to repeal the law, signaling a remarkable victory for the protestors (Grandia, 2017). In diverging from trends toward neoliberal agricultural restructuring, Guatemala has gone against the grain, both of its own

expected trajectory and larger regional and global trends. This is especially surprising given the way Guatemala's post-conflict landscape has been characterized in the literature.

Despite evidence of broader anti-GMO sentiments, most accounts prior to the 2014 mobilizations suggest the issue was uniquely a concern for the country's Indigenous and peasant citizens. In fact, just a few years before the 2014 protests, Klepek (2011) documented concerns about GMO policies exacerbating class tensions. This pre-2014 scholarship framed GMO resistance as primarily a Mayan movement (Grandia, 2014; Klepek, 2011, 2012). In contrast, accounts of the 2014 mobilizations against the Monsanto Law suggest the movement's success hinged on a powerful and diverse coalition, inspiring action from all sides of ethnic and class lines. Images of the protests show urban foodies, schoolteachers, peasants in straw hats, and Maya women carrying maize stalks out in the streets. Hackers temporarily shut down government websites (Grandia, 2017), while professional organizations of university professors and agronomists published official communications denouncing the law.

Existing explanations for why this heterogeneous bloc emerged largely emulate the dominant "reproach of the neoliberal food regime" framing previously outlined, leaning heavily on the moral economy of maize in galvanizing anti-GMO resistance (Grandia, 2017). However, as I show, this framing overlooks important differences between actors and fails to fully explain the participation of some social groups, particularly professional class, urban *Ladinos* (non-Indigenous Guatemalans). This is especially evident when taking into account how these debates continue to unfold.

On October 1, 2019, a new Ministerial Resolution proposed by the Ministry of the Economy took effect which officially allows for the importation, commercialization, and sowing of GM seeds. The resolution (No. 60-2019) enacts a Technical Regulation (RT 65.06.01:18) proposed by the Ministry of Agriculture. Written as a customs agreement with Honduras and El Salvador, the regulation itself is largely void of details, allowing each party to establish its own rules (Reglamento Técnico 65.06.01:18). The Ministry of the Economy has since passed a ministerial agreement to this end and the Ministry of Agriculture put forth a "technical instrument" to outline procedures for regulating GMOs (Acuerdo Ministerial No. 270 , 2019). These accompanying agreements include language about biosafety, absent from the 2014 Monsanto Law. Principally, they establish an Agricultural Biosafety Technical Committee to evaluate applications to use GMOs and outline the procedures by which applications should be scrutinized. The Technical Committee's main job is to make "scientifically and technically" based decisions about the risk that each application poses to human health and biodiversity. The manual assigns the National Council of Protected Areas authority to make decisions regarding GMOs in protected areas and promises the Ministry of Agriculture will conduct a "scientific study…to define areas that are centres of origin areas of genetic diversity"—though it does not state when the study will take place or what this designation will mean for GMO regulation (Acuerdo Ministerial 271-2019:47).

Another key difference between the 2014 and the 2019 legislation is that the new regulation does not specify sanctions for those who reproduce GM seeds unlawfully. The

technical manual put out by MAGA, however, mentions in vague language "legal and disciplinary measures" "deemed necessary" for those caught planting GM seeds without prior permission of the Biosafety Committee. Aside from this softening of sanctions and the inclusion of biosafety rhetoric, in all other respects, it resembles the 2014 Monsanto Law. Yet, it has not drawn the opposition—in terms of size and diversity—that prior legislation did. This variation between 2014 and 2019 raises questions about why diverse actors coalesce around the issue of GMOs in particular contexts and what impediments they face in demonstrating long-term, transformative change.

Members of REDSAG and grassroots Indigenous groups organized as the National Alliance for Biodiversity Protection have mounted campaigns against the law, appealing to the Constitutional Court to make a decisive decision once again against GMOs. While they achieved a temporary injunction, suspending implementation of the legislation, the injunction was lifted, and the legislation enacted again in February 2021. What little media attention the issue has received in dominant news outlets, has been unambiguously in favor of the legislation (Bolaños, 2019; Bolaños, 2020). Social media has largely been silent—outside of the networks already mentioned. Urban, professional class interest in the issue has seemingly vanished. As I'll argue, strengthening of the "biosafety" language may have pacified some within the anti-GMO bloc and may help to explain this twist of fate for GMOs in Guatemala.

'Biotechnologizing'

In this section I outline important differences between groups of anti-GMO activists, differentiating between those who could be called "experts," and Indigenous and *campesino* activists. I focus on the ways people described their understanding of GMOs, their concerns about the technology, their accounts of events, and how they described themselves in relation to other actors. First, I describe a "technical" or "scientific" discourse often employed by experts.

One middle-aged, *Ladino,* urban professional in the agronomy sector called his own perspective "technical" while labeling the converse "idealistic." Ramon, the agronomist who articulated these labels wrote a series of op-eds denouncing the 2014 Monsanto Law in the country's most widely circulated paper. Ramon told the story of how his article was written in response to another article published prior. Describing the other article, he said "the person who wrote it is...well is a person more of the socialist, leftists bent. The other article was written very passionately, and in my opinion, without much scientific evidence." He went on to explain that the controversy over this passionate, unscientific article spurred himself and others like him, to weigh in. When asked to expound on this distinction between the two perspectives he responded, "Her article was idealistic, this is technical. I'm attacking the problems, the problems that the law could cause without being at all idealistic about it. What I'm doing is saying look, if they want to pass this law-- that's fine but look at the law itself. There are technical problems with the law. I'm not attacking the law itself but the contents of the law. This is the point I'm trying to make."

The main problem raised in his articles is that Guatemala does not have a national inventory or system of cataloging the country's numerous species of plants, animals, and agricultural products. He locates this concern within a history of biopiracy in Guatemala, naming varieties of avocado and chayote he claims are Guatemalan but have been patented in Mexico. Without some system of control, he explained "this law would open up the option that they could patent everything they liked without any control", explaining that problems of "traceability" could allow any number of seeds originating in Guatemala to be appropriated and patented in other countries. Thus, he identifies his "technical" critique as one directed at specific aspects of the law, in contrast to an "idealistic" perspective that rejects GMOs writ large and the political system that produced the law.

I attended a public forum in 2018, convened after a new regulation (RT 65.06.01:18) was proposed—which evolved into the legislation now in effect. A representative of the country's professional association for agronomists was invited to give a presentation. The agronomist gave a twenty-minute presentation focussed on the economic consequences of moving forward with the law as written. He talked extensively about Guatemala's biodiversity and the potential to use genetic diversity to benefit Guatemala's economy. Instead, he explained, "there are no benefits for us because there aren't any Guatemalan seed companies." Rather than reject the proposed regulation or develop a new proposal, he concluded the presentation suggesting tweaks be made to the existing regulation. This reformist perspective, commonly recounted by other experts, singles out aspects of GMOs or the proposed legislation as the main problematic needing revision. Specifically, these experts emphasize the need to protect Guatemala's status as a mega-diverse country, lament the country's inability to do so adequately, and fear the national economic consequences of passing a law to allow GMOs without other biosafety protocols in place.

This perspective was also exemplified by the National Council of Protected Areas (CONAP), one government agency that took a stance against the Monsanto Law and has been actively engaged in crafting an alternative legislative framework. The central problem with GMOs, recounted by representatives of CONAP, are the potential threats to the country's biodiversity because of the lack of accompanying biosafety regulations in Guatemala. A senior official at the agency, and other employees I spoke with, also demonstrated a concern for fair access and use of biodiversity, as well as the inclusion of Indigenous communities' participation in this ongoing conversation. However, there seemed to be a point at which these actors are less tolerant of alternative views about GMOs. A higher-up at CONAP explained,

> We've encountered some dogmatic points of view. Some groups say 'we don't want any transgenic organisms'…. The problem with this is related to health. We need some GMOs, for example, to produce penicillin, you can't prohibit that. What worries me there is that there's a lack of education by the population. People are in opposition, but we believe that the opposition can't be so radical, rather some things have to be permitted and others no. For example, our position is that…speaking of crops, for

> crops that Guatemala is the centre of origin, they (GMOs) shouldn't be permitted for the possible contamination or effect that they could have on local species.

Rather than limit the types of GM crops allowed, an alternative suggested by many experts is to restrict GMOs from certain regions of the country with a higher presence of native seed varieties. This solution resembles Mexico's approach to GMO regulation, which many of these experts spoke of favorably. In siding with this reformist approach to GMO regulation, this CONAP representative also disparages those who oppose GMOs outright, as "radical" and uninformed, emulating the "idealistic" label offered by the agronomist.

This perspective prioritizes concern for biosafety but importantly it also shifts the conversation away from another set of concerns about property rights and unequal relations of power. While heterogeneous movements have opened the GMO debate to a wider range of voices, the space within which this conversation takes place may be defined by those actors with more power and influence—like these experts. Consequently, debates become concentrated on the appropriate governance of biotechnology in ways that can be controlled without major changes to existing social structures and institutions (Andrée, 2011; Newell, 2008). This coheres with what Levidow (1998) refers to as the "biotechnologizing of democracy"—the focussing of debates on technical problems, which are "amendable to neo-liberal risk-benefit analysis" and demand a "privileged role for experts" (p. 220).

In Guatemala, experts who allied with anti-GMO social movements in 2014, biotechnologized by objecting to specific components of the law or specific aspects of GMOs, emphasizing the need for a "scientific" or logical understanding of how genetic contamination works, potential threats to biodiversity, and economic rationality. These "technical" forms of opposition represent the ways experts aligned themselves with the rule of law, science, and common sense. These discourses did not foreground critiques of neoliberalism, capitalism, the enclosure of the commons, or ideas of equity and justice. Importantly, these discourses were also often employed to distance themselves from those who did, those who were perceived to be more radical.

Democratizing biotechnology

In contrast to this technocratic perspective focussed on biodiversity and nuanced ways to legislate its protection, Indigenous and *campesinos* peoples reject the privatization of seeds and resist any legislative attempts other than a total ban on GMOs. The idea that Monsanto, or corporations like it, would be empowered to "sell our own seeds back to us" was reiterated repeatedly. This was directly linked to the idea that a *campesino* could also be made to pay a fine if they were found using a patented seed they did not purchase. This idea was explained as antithetical to Indigenous and *campesino* lifeways in Guatemala. When I asked Carolina, an

Indigenous activist with REDSAG, to explain what motivated her to protest the Monsanto Law in 2014, she replied:

> The part about intellectual property, the privatization of seeds. This…this is, something that will not happen in Guatemala. Because here seeds are all going to be exchanged, so when somebody tells you, hey you are going to be penalized for doing this (exchanging seeds), or you're not going to have the right over, or to sow your own seeds—but how? If they were left to me by my grandparents and my great-grandparents?…. So, people are not going to ever understand, how it could be possible that someone shows up, that maybe isn't even Guatemalan, is a foreigner, and claims for themselves what I have struggled for?

Many people expressed various forms of this idea—that seeds, the inheritance of Indigenous communities and *campesinos*, would be appropriated and used against this same group of people to criminalize them.

To be clear, people of all walks of life found this aspect of the Monsanto Law particularly objectionable. Yet, this was uniquely personal and infuriating to Indigenous and *campesino* informants, because it was understood within a larger historical trajectory of dispossession and criminalization. Carolina continued,

> My family was, well…victim of the armed conflict. I took refuge in Mexico for fourteen years when I was a young girl. I lost a lot of family in the armed conflict. I think this leaves you with a reflection, with a perspective of what happens in this county- and you say, these were my brother and sisters…so so many. There is…in Guatemala, there is enormous dispossession, and above all of Indigenous peoples…. Today there aren't favorable resolutions, because they don't want to cede control over land. So, when you see all of this, you realize that you are a part of all of this. For us, Indigenous peoples, we are…we don't look at the natural world, at the land from outside, we see it from the inside because we are part of it.

Carolina's perspective demonstrates how recent threats to native maize are inseparable from a larger historical arc of colonial dispossession and her perception of human/non-human relations. During a meeting convoked by CONAP, a man representing an Indigenous civil society organization reiterated this ontological argument. In resistance to the continued use of the word biodiversity by CONAP, he chimed in "Todo es vida" (everything is alive), he said, "we have to break this mindset", referring to the dichotomy often drawn between human life and "nature". He argued it would be impossible to create an adequate biosafety regulation—one that would protect life from this more holistic perspective. This perspective, based in broader social-economic concerns and historical abuses of power exemplifies what others framed as "radical" or "idealistic," rather than "technical" opposition to GMOs.

The critique of their perspective does not go unnoticed by Indigenous and *campesino* activists. In fact, they had their own critiques of biotechnologizing to offer. Carolina told me the story of an organization, active in the REDSAG network, which promotes hybrid seeds (a cross-pollinated seed) like they are "some kind of marvel and that hybrids are going to save the world." Incredulously, she told me their naiveté can be explained by the fact that they're "academics" who have no concept for the day-to-day life of a *campesino*. Another *campesino* I spoke with added, "how many scientists are they going to invite to explain what transgenic seeds are? It makes me laugh, because…its fine technical information…it's all fascinating. But it's not the most important thing, this is not the point. The most important aspects are social, political and economic."

Similar to other places in Latin America, Indigenous and *campesino* seed activists see their work as a continuation of a long history of struggle against imperialism and (neo) colonialism (Escobar & Fitting, 2016). Their resistance draws on a rights-based framework, clearly aligning with "seed sovereignty," rejecting GMO, IPRs, and any form of seed commodification writ large. The activists I spoke with pursue seed sovereignty because they see defending native seeds not only as a form of resistance to corporate agriculture and the commodification of life but as part of a larger struggle for political autonomy, cultural survival, and food sovereignty. They resisted the terms of the debate proposed by "expert" allies and used the GMO issue to challenge prevalent forms of both "technology" and "democracy"—what Levidow (1998) calls "democratizing biotechnology".

Political strategies

Important differences also showed up in in the political strategies of these diverse actors. Experts demonstrated hesitance to participate in street protests and some disparagement for those who do. A middle-aged *Ladina* biologist, Mary, from Guatemala City, described apprehension to participate in street protests. Mary, who was active on a university committee that studied and ultimately denounced the Monsanto Law, explained of her own opposition, "First of all, I don't consider myself an activist. Yes, I reacted (to the Monsanto Law), but this is my job, this is my normal work, I revise documents, look for justifications, the technical aspects, the legal aspects and then confront them. But, I didn't go with social organizations and protest in front of congress...those kinds of things, no. That's not my job…. I don't consider myself an activist." Central to her refusal of the label "activist" is a critical view of protests, and a dismissiveness toward *campesino* mobilizations. This was a perspective I also heard from others, even those who had very active roles in denouncing the law. Ramon, the individual who wrote op-eds, also demonstrated disdain for street protests, questioning the authenticity of protestors. He explained, "The *campesino* goes out (to protest) because they give him food and they give him money", urging me to verify this fact with others. He described this kind of "manipulation" as threatening the potential for the movement to have an "internal conscience" necessary to make long term change.

Both perspectives signal class and ethnic boundaries, creating a dichotomy between those who draw on their emotions to resist GMOs and those who make intellectual decisions about them—those who are misguided and those who have made a calculated, informed decision. This dichotomy resembles what Wynne (2001) calls "expert cultures of risk". Experts, he explains, create a false dichotomy "between factual, objective and real knowledge on the one hand, and cognitively empty emotion or values on the other, and that whilst science looks after the former, lay publics are only capable of taking sentimental, emotional and intellectually vacuous positions" (p. 445). While these "emotional" reactions in some instances may be effectual, they are often perceived to be substantively empty. Rather than just being emotional reactions, Wynne argues, public judgments about GMOs are often quite rational. They are often judgments about the nature of knowledge itself, the ways costs and benefits are calculated and the quality of scientific and political institutions that produce and endorse them. Thus, labeling some forms of contention as emotional or reactionary becomes a way in which these opinions can be reduced, not taken seriously, and ultimately overlooked.

These statements about the "best" way to oppose GMOs align well with "technical" discourse, which participants drew on to align their anti-GM positions with science and the law. In doing so they also distance themselves from those who are more "idealistic" or in this case, "activists." Together these discourses delegitimize more radical claims, delimit the boundaries of debate, and frame GMOs as amenable to a technocratic solution. In other words, they frame the problems of GMOs as challenges that can be managed within existing structures of bureaucratic and political power (Newell, 2009). Framing the problems of GMOs as such may have ultimately led to the kinds of biosafety and procedural details elaborated in the 2019 legislation. These restrictions—though loosely worded and arguably toothless, seem to address concerns articulated by "expert" anti-GMO actors in Guatemala. As has been demonstrated elsewhere (Carroll, 2016; Dondanville & Dougherty, 2019), these concessions may be the first step in facilitating a path for largely unchecked capital accumulation.

Conclusion

As several scholars have noted, political contestations about agrarian and food justice issues are far from homogenous (Borras Jr. et al., 2018; Holt-Giménez & Shattuck, 2011). They are often marked by both conflict and cooperation, convergence and contradiction (Borras Jr. et al., 2018). Actors can diverge in their emphasis on "immediate and long-term issues, strategic and tactical political maneuvers, sectoral and multisectoral issues, policy change and system change, reform or revolution" (Borras Jr. et al., 2018). This diversity is not always a threat. It can be possible for groups to pursue different preferred strategies of protest and use its resources "where the returns are likely to be highest" and to still articulate a common critique (Newell, 2008 p. 358). In the case of Guatemala, however, particularities of the context shaped anti-GMO intra-movement

dynamics and produced tensions that are difficult to surmount—tensions resonant with historically significant class politics.

Experts—mostly urban *Ladinos*—tended to articulate their resistance to GMOs using a "technical" discourse. This meant objecting to specific components of the law or specific aspects of GMOs, emphasizing the need for a "scientific" understanding of how genetic contamination works and potential threats to biodiversity. These concerns fixated on certain pre-conditions, such as designating restrictions in areas of higher genetic diversity. This policy-fix described by experts is underpinned by economic rationality, specifically desires to secure greater national economic benefits. These discourses did not foreground critiques of neoliberalism or capitalism, or ideas of equity and justice. By framing their opinions in scientific and economic terms they also draw boundaries around themselves and those who are perceived to be emotional or idealistic in their tactics, motivations, and goals. These labels function to trivialize broader critiques often wielded by *campesino* and Indigenous activists who, in contrast, describe their perception of GM seeds as threatening to lifeways and their resistance to GMOs in anti-neoliberal and anti-capitalist terms. These actors democratize biotechnology by challenging the terms and conditions of the GMO debate.

For a time, these divergences did not affect the movement's ability to slow the advance of GMOs, but the future success of this movement is beginning to look dim. The lack of large-scale mass mobilization in the face of new legislation may be, in part, explained by the tensions brought to light in this study. As articulated by experts, some would be satisfied with minimal restrictions on GMOs, the likes of which would not undermine the neoliberal food regime.

This would square well with what science and technology scholars have written about how biotechnologizing can limit the horizons of anti-GMO social movements. Previous research employing this STS concept, has portrayed this framing as a tool of pro-biotech groups, attempting to secure the consent of anti-GMO activists. In contrast, the case of Guatemala shows that some well-intentioned anti-GMO critics can also, perhaps unwittingly, biotechnologize democracy to the same ends. Thus, the case of anti-GMO activism in Guatemala reveals the need for more attention to the heterogenous motivations of social movement actors, the intra-movement dynamics they create, and the ways specific issues produce collaboration and tension in particular contexts.

In attempting to disaggregate actors and their discourse, it may be too easy to assume a coherence that is not as neat in reality. An agronomy professor who printed out a copy of the Monsanto Law bill for me, emphasizing legal technicalities with which he disapproved, also precariously balanced on a chair to locate a cob of native maize off a shelf, which he presented with glowing adoration. While his personal argument against the Monsanto Law was based more on the sheet of paper, this act suggests native maize was also relevant and important to him at some level. Thus, it seems important to consider the ways actors resist any one simple framing or may embody multiple. Attention to these contradictions, as well as greater attention to the way intersectional social identities might combine to shape beliefs and behavior, would enhance further investigation of this topic.

As others have argued about contemporary agri-food movements, effects also matter (Carroll, 2016; Gupta, 2014; Shattuck et al., 2015). Since as early as 2006, transnational corporations and powerful trade partners have pressured the Guatemalan state to align national laws with UPOV. For more than a decade and in the face of several attempts, the country resisted these powerful forces. Defying these neoliberal foes is no small feat for Guatemala, especially given its post-conflict state. This raises the question: how important is ideological cohesion for challenging the neoliberal food regime? In the case of Guatemala, untangling the balance of forces in the anti-GMO movement has shown important ideological differences and significant impediments to building a truly anti-neoliberal bloc. Despite the differences in logic and ideological tensions, I also saw powerful representation of collaboration across divides. As the man from the professional agronomist association delivered his ardently reformist, technocratic critique of the proposed GMO legislation, he stood under a banner with the words written in all caps "IN DEFENSE OF OUR NATIVE SEEDS AND ANCESTRAL KNOWLEDGE. NO TO TRANSGENICS AND TO PATENTS." Despite important ideological differences in the room, this man was invited to speak and felt comfortable enough to share his opinion openly. However weak or imperfect these alliances may be, these spaces for dialogue may at least hold the door ajar for stronger alliances to be built and ideas to spread and grow.

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