

# Lives Versus Livelihoods? Deepening the Regulatory Debates on Soil Fumigants in California's Strawberry Industry

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**Abstract:** Soil fumigants have been critical to the California strawberry industry's success, but they are also highly toxic to farmworkers and nearby residents. This article traces recent regulatory debates over restrictions on their use which were cast as a contest of lives and livelihoods: activists emphasized the danger of the chemicals while industry emphasized their necessity. Activists' claims were typical of environmental justice battles that focus on disproportionate toxic exposure to marginalized populations, but I problematize that they downplayed industry concern with farmworker jobs. Drawing on Marx, Foucault and recent literature on surplus populations and disposability, I suggest that the analytical separation of lives and livelihoods is complicit in the making of disposable workers such as California farmworkers. Strategically, upholding the separation was a missed opportunity to leverage the strawberry industry's new-found concern with farmworker employment and push for measures that protect current and future farmworker health.

**Résumé:** Fumigantes de la tierra han sido críticos para el éxito de la industria de la fresa de California, pero también son altamente tóxicos para los trabajadores agrícolas y los residentes cercanos. Este artículo describe los recientes debates reglamentarios sobre restricciones en su uso, que fueron emitidos como un concurso de vidas y medios de vida: activistas hicieron hincapié en el peligro de los productos químicos, mientras que la industria hizo hincapié en su necesidad. Demandas de los activistas eran típicas de las batallas de justicia ambiental que se centran en la exposición tóxica desproporcionada a las poblaciones marginadas, pero problematizo que despiden la preocupación de la industria con puestos de trabajo de los trabajadores agrícolas. Sobre la base de Marx, Foucault y literatura reciente sobre las poblaciones excedentes y disponibilidad de acceso, yo sugiero que la separación analítica de la vida y el sustento es cómplice en la fabricación de los trabajadores desechables, tales como los trabajadores agrícolas de California. Estratégicamente, la defensa de la separación fue una oportunidad perdida para aprovechar la recién descubierta preocupación de la industria de la fresa con el empleo de los trabajadores agrícolas y impulsó medidas que protejan la salud de los trabajadores agrícolas actuales y futuras.

**Keywords:** disposable workers, farmworkers, pesticide regulation, environmental justice, soil fumigants, strawberry production

It's the same thing every time ... You go to these meetings and you have the people over here [saying] they're dying, they're pregnant, and their kids are dying, and then you've got the growers who say, my god if we lose this we're going to go broke. It's the same thing every year. It doesn't matter what chemical it is.

(California strawberry grower, interviewed June 2015, reflecting on public hearings over the use of soil fumigants)

Recent years have seen testy regulatory battles over the use of several chemical fumigants of great concern to California's lucrative strawberry industry. This industry's success owes a great deal to these chemicals which growers use to sterilize soil in advance of planting berries. Yet, its most favored chemical, methyl bromide, has been on protracted phase-out under the Montreal Protocol on Ozone-Depleting Substances; a second chemical designed to replace it, methyl iodide, is extremely toxic and after meeting fierce public resistance was withdrawn from the market; a third chemical, chloropicrin, was designated a toxic air contaminant and now must be used with augmented mitigation measures in California; and a fourth chemical, 1,3-dichloropropene, already is mitigated by township caps with even stricter rules likely to follow.

This article examines the debates that took place in California over two of these fumigants, methyl iodide and chloropicrin, much of which revolved around competing claims about the toxicity of the chemicals. As is typical in such debates, many of these questions of harm were articulated through discussions about scientific method, use of data, and sufficiency of evidence (Boudia and Jas 2014; Dunsby 2004; Frickel and Edwards 2014 Harrison 2006; Ottinger 2010). More specifically, the methyl iodide case largely revolved around the responsible regulatory agency's mixing of methods in generating the risk assessment to support registration of the chemical (Guthman and Brown 2015b), whereas the chloropicrin debates revolved on whether "sound science" had been used in that agency's setting of allowable thresholds and buffer zone sizes (Guthman and Brown 2015c). In this article, I bracket the scientific controversies and focus instead on the most salient substantive theme of the debates: activists consistently emphasized that use of the chemicals would cause more sickness and death, while the strawberry industry consistently emphasized how reduction or loss of the chemical fumigants would precipitate a huge contraction of the California industry and cost hundreds of thousands of jobs. As one observer pithily put it, it was a contest of lives versus livelihoods.

Although the activists consisted of a range of organizations and interests, including public health, farmworker, and environmental groups, the tone they struck and the claims they made were in many ways typical of environmental justice (EJ) battles. They deployed arguments to show high, often hidden potentials of exposure or other harm and treated industry responses of potential economic hardship as hollow, even disingenuous. There is certainly a lot to be said for an EJ analysis which emphasizes the systematic and disproportionate exposure of marginalized and disenfranchised groups such as farmworkers to health hazards in the workplace. Yet I want to problematize that activists in this case downplayed the industry's concern over farmworker livelihoods. In doing so they joined industry in treating lives and livelihoods as wholly separate (as did farmworkers themselves, to the extent they participated), neglecting that in capitalist economies making a living is a necessity for practices that ensure at least a modicum of health and that a modicum of health is necessary for making a living. In that way the observer who coined the battle as one of lives versus livelihoods, while apparently playing on an idiosyncrasy of the English language in connoting health and jobs, was on to something.<sup>1</sup> Crucially, this is the same analytical separation that is complicit in

the making of disposable workers, those who are valued for their labor power but not for their lives, as has been the case for California farmworkers historically (Mitchell 1996; Wells 1996; Majka and Majka 2000). So, in this article I want to deepen the EJ analysis, by bringing to bear relatively new work on surplus populations and disposability. Based in a rapprochement of Marx and Foucault, this work revisits how bodies that matter as labor power have become disarticulated from subjects that matter as people and thus suggests a politics that refuses that separation.

On that note, I think there are strategic reasons in addition to these conceptual reasons to reject an analysis that pits lives against livelihoods. In the debates discussed here, it is significant that industry joined activists in voicing their concerns in the name of farmworkers—a population that, as largely Latino and often undocumented, has generally been marginalized and even invisibilized in regulatory discussions (Harrison 2006). Activists missed an opportunity to call the question on the strawberry industry's new-found concern with farmworker employment to argue for production systems that are less chemically intensive and provide even more jobs.<sup>2</sup> Moving forward, it is significant that in other contexts, the strawberry industry has been complaining bitterly of labor shortages. The latter has been documented in both the media (e.g. Brat 2015) as well as through my own research with growers (Guthman 2016). Such concerns did not arise in these debates, perhaps because they took place before the shortages became acute. Nevertheless, it appears that the very conditions that have made farmworker lives and livelihoods appear separable are changing. Specifically, the border and immigration policies that once served growers well, by creating a class of vulnerable workers, are now causing growers to abandon acreage, even to go out of business. If working bodies are truly in short supply, industry ought to care in a substantive way for the health and safety of this and future generations of farmworkers who may be affected by fumigants and other agrochemicals—and activists should find ways to press those points.

## **Environmental Justice and the Attenuation of Lives and Livelihoods**

Activism of the kind discussed here has both provided the basis for and has been informed by an increasingly rich body of environmental justice (EJ) scholarship. This scholarship typically documents and explains how populations marginalized by race, class, gender or citizenship status are routinely and systematically disproportionately exposed to toxins by dint of their spatial location and/or disenfranchisement from political processes that regulate toxins (Bryant 1995; Bullard 1997; Cole and Foster 2001; Schlosberg 2007 Shrader-Frechette 2005). A great deal of this scholarship has also documented activist efforts to prosecute environmental justice claims (e.g. Allen 2004; Brown 2007; Corburn 2002; Frickel 2004; Harrison 2008; Holifield 2012 Morello-Frosch et al. 2001; Ottinger 2010; Sze 2007). Despite its nods to where people live, work and play, however, most of the EJ literature has focused on exposure in relation to place of residence.

The question, then, is how this literature applies to situations in which livelihoods as well as lives are at stake. In general, EJ scholarship on workplace exposure is much less developed, but that which exists tends to distinguish livelihood concerns from health concerns and gives focus to the latter. Park and Pellow's (2004) work on Silicon Valley, for example, argues that historical processes of racialization and explicit discrimination relegate people of color to the least desirable jobs in the Valley where they are exposed to hazards and health-depleting working conditions.<sup>3</sup> Other accounts of workplace-focused exposure, several of which coincidentally focus on farmworkers, also tend to retain focus on lives (Harrison 2011; Nash 2004; Wright 2005). (The important exception here would be Pulido's [1996] account of the United Farm Workers Organizing Committee campaigns in which stronger worker protections in pesticide handling was equal to demands for higher wages.) For example, Harrison's (2011) excellent book-length treatment of pesticide drift and environmental justice, while putting workers at the center, gives a great deal of attention to showing how the severity and scope of pesticide drift has been under-recognized. She certainly acknowledges that farmworkers cannot easily contest exposure because of fear of replacement in labor markets characterized by surplus, or deportation if they are undocumented. She also notes that farmworkers feel pressured to accept pesticide exposure in order to keep their jobs. But this is not the same as acknowledging that not earning a livelihood also poses a risk to lives, admittedly not the focus of her work. Still, the point is important, and Holmes (2013:21) provides an apt antidote to the perhaps unintentional disassociation of life and livelihood in environmental justice literature when he notes that the so-called risky behavior of crossing the border precludes the greater risk of a life without money, food, work, or education. Carney (2014) furthers this point with her account of the illnesses that befall many migrant women due to chronic food insecurity associated with underemployment.

With its inattention to the importance of livelihood for health, environmental justice scholarship also has little to say about the industry's invocation of jobs other than perhaps to suggest that it is disingenuous.<sup>4</sup> At some level, the very core of the environmental justice analytic requires a dismissal of industry claims, since industry is both the source of danger and the more powerful player in regulatory battles (Allen 2004). And, of course, there's good reason to be skeptical of industry's position. Casting industry viability with community viability, industry health with community health, is an old trope, and, as we will see, shows up in these debates when industry spokespeople plead that the activist position is "divisive". As Henke (2008) shows, that was precisely how Salinas Valley growers fought union activity in the 1930s. And it was eerily similar to how in the 2000s organic growers fought legislation to close a loophole on the use of the short-handled hoe. Here they claimed that their interests were aligned with workers', especially since a robust organic sector would both ensure worker livelihoods and protect them from pesticides (Getz et al. 2008). Saxton (2015), writing on these same methyl iodide battles I discuss, also problematizes equating industry well-being with farmworker well-being. Still, to dismiss categorically the industry's concerns misses an opportunity to see how industry positions might be shifting and therefore be subject to pressure. Besides, it seems methodologically suspect to take one position

at face value while casting doubt on the other, particularly in a set of debates in which both sides' positions have been so consistent and apparently well rehearsed.

## **Context of the Regulatory Debates**

Debates over fumigants must be understood in the context of the economic importance of California's strawberry industry. As of 2014, strawberries were the fifth highest grossing crop in California, representing US\$2.6 billion in annual revenues to the state's economy and 88% of the production in the US (California Strawberry Commission n.d.). They have become the number one agricultural crop in four coastal counties and number two in a fifth. Owing to the delicateness of the strawberry and the use of technology for nearly all other processes except for the harvest, strawberry production is highly dependent on harvest labor, with about half of the per acre costs (\$50,000, today) going to wages (Wells 1996). In these counties, production alone employs tens of thousands of workers, many undocumented, with many more working for pesticide applicators, irrigation services, and shipping. In addition, the strawberry industry has created one of the few sources of employment for several counties in the far north of the state which have seen tremendous economic decline in the wake of the timber industry's contraction. There, several major strawberry nurseries take advantage of the cheap real estate and cold winter weather that makes young strawberry plants flourish later in life.

Many environmental conditions and technological developments have converged to make the strawberry industry so successful on California's coast, but chief among them has been the use of soil fumigants which have contributed to enormous increases in productivity since they were first used in the 1960s (Gareau 2008; Wells 1996). Although these gaseous chemicals control weeds and nematodes, they are most important for controlling a set of soil pathogens that attack the root system of strawberry plants, causing them to wilt and die. Fumigation not only allows growers to plant on the same block year after year or in regions capable of long strawberry harvests and rotate with vegetables every other year; they are also insurance against massive crop failures. Therefore, restrictions and mitigation measures for fumigants pose a huge threat for the strawberry industry and allied businesses.

At the same time, fumigants are some of the most toxic substances used in agriculture, and because they necessarily volatilize and are subject to drift, they are most harmful to those in the immediate vicinity of application: neighbors, bystanders, and farmworkers (Harrison 2011). Methyl bromide, banned for its ozone-depleting properties, has also been designated a neurotoxin and developmental toxicant with possible epigenetic effects (Harrison 2011:34). Methyl iodide is a known neurotoxin and carcinogen—used to induce cancer in laboratory animals, associated with suppression of thyroid hormone synthesis, respiratory illness, and lung tumors, and has been implicated as a cause of miscarriages, birth deformities, and non-normative development (Froines et al. 2013). Chloropicrin, which is essentially tear gas, has been designated a toxic air contaminant by the US Environmental Protection Agency (EPA), and activists say it is carcinogenic as well. 1,3-Dichloropropene is a known carcinogen. For environmental and public health interests, use of these chemicals poses a huge threat to life.

The debates over methyl bromide set the tone for what was to come. In 1991, the Montreal Protocol, initially signed in 1987, mandated the phase-out of methyl bromide for its ozone-depleting qualities. As a signatory to the Montreal Protocol, the US agreed to stop producing and importing methyl bromide by 2005. However, based on already existing exceptions to the ban for “essential” uses, it began to argue for an exemption to the ban for “critical” uses. Critical uses, as defined in the language promoted by the US, were those for which there are no technically and economically feasible alternatives and that would result in significant market disruption (DuPuis and Gareau 2008). Crucially, the case for these critical exemptions (CUEs) was made on the basis that the ban “would make a significant portion of the California strawberry industry economically unviable” (DuPuis and Gareau 2008:1225). Opponents of the CUEs focused not only on the environmental issue of ozone depletion, but also on the health effects of methyl bromide. In an international meeting in 2004 when parties discussed these exemptions, a representative of California Certified Organic Farmers stated that “farmers [do not] need to use materials that are destructive to the environment, harmful to the employees, or dangerous to anyone who may come into contact with the farm operation” (quoted in Gareau 2012:95). Regardless of the success of the industry in gaining CUEs, they were a temporary solution. All uses except for nursery uses, exempt from phase-out because of a separate “quarantine” exemption, were to be eliminated by 2015. As of this writing, 2016 will be the last year for which strawberry growers can access methyl bromide (US EPA n.d.).

In this context, the arrival of methyl iodide seemed a godsend for the industry. Arysta LifeScience, which owned the license for the chemical, first sought registration with the EPA for commercial use in 2002. Emerging controversy, including a September 2007 letter from over 50 scientists, several of them Nobel Laureates in chemistry, caused the EPA to deny registration at first. However, a month later the agency reversed course, granting a one-year registration that was extended without time limitations in 2008. Registration of the chemical in California was even more fraught, due to an intense activist campaign that arose to thwart it. The strategies of that campaign are detailed elsewhere (Guthman and Brown 2015b); here it is important to note that California’s Department of Pesticide Regulation (DPR) did a poor job in handling the scientific controversy. This led to a lawsuit that was the nail in the coffin for the chemical’s commercial viability, although the CUEs for methyl bromide were also a major factor.

The debates about chloropicrin followed right on the heels of the methyl iodide battle, and were clearly shaped by that battle, since DPR had taken much heat over its handling of methyl iodide registration. Chloropicrin had long been used in combination with methyl bromide, for both its synergistic effects and its capacity as a warning agent, given its noticeable smell and irritating qualities. With the phase out of methyl bromide, growers began to use higher percentages of chloropicrin or even to use it alone. The context of these debates was a routine re-registration study by the EPA, which designated it as a Toxic Air Contaminant in 2010 and tightened its “label” requirements for application. In 2013, under the leadership of a new director (a former organic farmer appointed by a Democratic governor), DPR proposed mitigation measures that at first went significantly beyond the revised



EPA label, although in the end seemed to differ only modestly (Guthman and Brown 2015c). Regardless, many of the comments made in the chloropicrin debates harkened directly back to the methyl iodide fights.

Clearly, the debates about methyl bromide, methyl iodide and chloropicrin were about different chemicals, with different potential effects, and different regulatory questions up for grabs (e.g. how to phase out, whether to register, how to mitigate). They also involved somewhat different sets of actors and were fought in different arenas, from international treaties to state regulatory agencies. And so the specifics of the scientific controversies were different. Yet, as suggested in the opening epigraph, the substantive content of the debates was remarkably similar, very much boiling down to lives versus livelihoods.

## **Content of the Regulatory Debates**

There is an abundance of data on these debates, especially for methyl iodide which was battled over several years in multiple venues. One huge source of data was the 53,000 written public comments submitted in 2010 to DPR about its registration decision. For this article I set aside the comments coming from the general public, a great many of which mistakenly focused on consumer bodies and consumption habits (Guthman and Brown 2015a) and draw only on those that were substantive and came from close stakeholders in the debate. I further draw on oral testimony made at several hearings, including at the California Assembly's Labor and Employment committee, held on 19 February 2009; workshops of DPR's External Review Panel, held on 24 and 25 September 2009; a joint meeting of the Assembly Health and Environmental Safety and Toxic Materials Committees, held on 22 February 2011; and a meeting of the Monterey County Board of Supervisors, held on 14 February 2012. For the chloropicrin debates I draw on a set of hearings held by California DPR on its chloropicrin mitigation proposal. Those my research team attended and recorded were held in the towns of Salinas, Santa Maria, and Redding in June 2013. We coded transcriptions of these data using the qualitative research software NVivo10. In all cases, we first listened to or read through the comments to get a gist of the discourse and then developed thematic codes. Most of these fell under the themes of economic viability, farmworker and community health, and scientific decision-making. We also developed codes to demarcate types of stakeholder (public health, grower, researcher, etc.).

In presenting these data, I will use "industry" as a shorthand to describe comments submitted by strawberry growers, growers' organizations, such as the California Strawberry Commission, other allied businesses and the groups that represent them, and politicians and researchers supporting industry perspectives. I will use "activist" as shorthand to refer to those representing environmental, public health, and farmworker groups, along with individual community members, and the politicians and researchers who supported their perspectives. These are heuristic categories only, as many industry spokespeople could also be described as "activists". Moreover, there were noticeable differences between, say, labor groups and environmental groups, and certainly among different groups representing industry. For example, those who wanted to sell alternatives to one of the contested chemicals were hardly going to align with the makers of those chemicals. Nevertheless, it was still a highly polarized

debate that primarily broke along these lines, with farmworkers themselves speaking for both sides.

### ***Activists: Fumigants are Dangerous, Especially for Workers***

Activists, who were by definition focused on the dangers of the chemical, consistently cast doubt on whether safety could be assured. Taking a classic EJ position, many comments were about mitigation measures, such as tarps and buffer zones, designed primarily to protect neighbors and others in the vicinity of fumigations. Tarps (of varying permeability) cover the fields during the treatment to keep the chemical in to do its work and also to keep the chemical from volatilizing and drifting to nearby residents, schools, businesses and so forth. Buffer zones are strips of untreated land between treated fields and nearby sites. Activists questioned whether these mitigation measures would adequately prevent exposure. For example, they noted the pesticides often drift much further than the distance of buffer zones. They also noted that buffer zones are based on probabilities of exposure that do not even assume 100% protection. And they noted that the tarps often tear.

Unusually, activists also drew specific attention to the issue of worker exposures, albeit still through an EJ frame focused on disproportionate exposure. Setting the tone, the chair of the Assembly Labor and Employment committee meeting, Bill Monning, opened one of the hearings on methyl iodide by saying that:

Too often in my experience with pesticide issues worker health and safety takes a back burner. Unfortunately farmworkers have often been put in harm's way and have ended up being the guinea pigs before a chemical is ... banned at the federal or state level ... I do understand the utility [of fumigants] to certain members of the agricultural community. However, I think the worst thing possible would be for us in our rush to find an alternative to adopt an alternative that is equally if not more destructive to worker health and safety.

In consideration of farmworker exposures, several commented on the inadequacy or neglect of protective equipment for farmworkers. Testimony from farmworkers themselves was particularly telling on this point. At the methyl iodide workshop, a farmworker spoke of the potential for off-gassing when planting following fumigation:

I am a farmworker, and I'm always exposed to chemicals. I would like for you to put yourselves in my place and see all the things that we are exposed to. Because not all of us workers get the protection that we need. There are some places where workers are protected, but there are other places where workers are not protected at all. Like when we go plant the strawberries, you have to punch the holes to put in the plants; there are chemical residues, and it comes out at the moment that you open the hole. And at that moment is when you get dizzy.

At that same hearing another worker discussed how workers often have to buy their own protective equipment, such as "sleeves" that protect the hands from



chemicals. Also testifying at the meeting was a farmworker who spoke about how women, in particular, did not receive adequate protection. In this snippet, Hammond and Froines are members of the review committee while Espinoza is the woman testifying:

Dr Hammond: Could you do me a favor and tell me which kind of mask you use? Point to the picture.

Ms Espinoza: None of those. They are just rags, pieces of cloth that we buy.

Dr Hammond: You say you buy your own or they gave you?

Ms Espinoza: They gave the men the masks, but not to us.

Dr Froines: They did what?

Dr Hammond: They give the men the masks, but not the women.

Given the uneven use of protective equipment, some comments pointed out that the mitigation measures designed to prevent drift to neighbors could, ironically, put workers in double jeopardy. After recounting two incidents of torn tarps and sickened workers in Salinas, an attorney with California Rural Legal Assistance, speaking at the chloropicrin meetings noted that:

This technology is only as good as its weakest part. A couple of years ago, I drove down Boronda on my way home, and I saw tarps flapping in the wind. And I saw two guys out there, with shovels, no respiratory protection, no protection on their clothing, desperately pulling up tarps, trying to throw soil on the tarps to keep it all down.

Commenters also noted that those assigned to monitor the fumigations, another requirement, would be farmworkers who could be exposed in the very act of monitoring since the requirement is essentially to check for sensory irritation.

Another theme that arose was that mitigation measures, including those for farmworkers, would be weakly enforced, another theme of environmental justice activism. A written comment from the California Public Health Association noted that the proposed mitigation rules for methyl iodide would:

not be sufficiently enforced to protect workers or the general public ... DPR is requiring face-sealing respirators for workers when applying methyl iodide, the implementation of which would presumably be enforced by both DPR or agricultural commissioners and Cal-OSHA ... CPHA-N does not find evidence that Cal/OHSA and DPR have sufficient resources now or will have in the foreseeable future to enforce these requirements in all fields growing strawberries in California.

While public health and safety was the key theme in virtually all activist comments, it is not the case that industry entirely ignored the dangers of the chemical. Some industry comments framed safety as a relative matter, suggesting that the use of fumigants, while not optimal, mitigated a greater environmental or health harm. Speaking at the Salinas chloropicrin hearings, for example, a vegetable grower remarked that, “starting with clean soil, free of pests, has also enabled us to use fewer pesticides”. However, most comments from industry that acknowledged health and safety issues

folded them into larger rationales about industry viability and, more significantly, protecting the livelihoods of farmworkers. As put by a farmer at the Assembly joint hearings on methyl iodide:

As a farmer ... I do not make the decision to use any of these products lightly, but I do need the option to use them if and when it becomes necessary. We do need those tools in agriculture. With that being said I agree that all precautions need to be taken to ensure these products are safely used. The farmers in California are not on an even playing field when it comes to competing with other states and most importantly with other countries. This not only impacts the farmer but it also impacts the farmworkers.

A similar point was made at the Salinas hearings on chloropicrin by the President of the General Council of the Grower-Shipper Association of Central California. He asserted that “our growers are concerned about the safety of their workers and the community in which they live. They rigorously follow the required EPA safeguards that are already in place for chloropicrin” but at the same time noted that, “chloropicrin protects billions of dollars in California crops that are responsible for tens of thousands of farm-related jobs”.

### ***Industry: Fumigants are Necessary, Especially for Workers***

As revealed in this last set of comments, industry stakeholders amplified the necessity rather than the danger of the chemicals, and shifted the focus to livelihoods. Acknowledging that the chemicals are not ideal, several commenters discussed their necessity in the absence of viable non-chemical alternatives. At the Assembly Health and Environmental Safety and Toxic Materials committee meeting, a representative of the California Strawberry Commission spoke at length about the enormous financial resources that California strawberry farmers have put into research on methyl bromide alternatives, “more than any commodity group in the world”. “Unfortunately”, he said, experts “have not found anything that is commercially viable for strawberry farming, except the combined use of other fumigants, including methyl iodide. University researchers determine that the non-fumigants alternatives either have limited efficacy or are not economically viable”.

In arguing for the necessity of the chemicals, and the absence of viable alternatives, most comments on behalf of the industry discussed what the loss of fumigants would mean for the economy. Making explicit this connection was a comment from a Salinas attorney speaking at the Monterey Board of Supervisors hearing:

Without an effective alternative to methyl bromide the sky will fall on agriculture: the strawberry/lettuce industry, which is dependent on high yields to compete, will shrink; capital will go elsewhere; jobs will be lost, headquarters will not be built. Like the frozen vegetable industry that collapsed on the central coast, the strawberry industry will not be economically sustainable and we will all be asking what happened. I can tell you how it happens. It starts with situations like this one.

Many commenters cited statistics showing revenue and job loss—for example in written comments on methyl iodide, an attorney cited an analysis that “found that failure to register methyl iodide would result in a decrease in total economic activity of approximately US\$1.3 billion and the loss of approximately 50,000 jobs”. Others made these points in a more personal register. Speaking at the Salinas chloropicrin meeting, a grower and consultant in Monterey County argued:

For those people that think it's bad: everything is bad. Smoking is bad. Everyone smokes. Chloropicrin is bad ... Some of you are not [even] around the fumes like we are. [Yet,] we depend on it. My family depends on it ... It's really hard to understand how it is that you guys will come and oppose to something that we are doing in benefit of you, everybody: providing food, providing jobs, more than anything.

While comments such as these invoked farmer livelihoods and the economy more generally, a subset of commenters focused almost entirely on the jobs the strawberry industry brings. Noting that methyl iodide was “critical for agriculture in my district and for the agriculture across the state”, an elected representative speaking at the Assembly committee meeting noted that:

Without this product the nurseries and farms will be forced to close. Jobs and revenues will be lost. We cannot afford to let this happen. With all due respect to the members and the chair, the responsible thing for us to do is let the department do its job; they are looking out for our health and environment and they are looking out for jobs, and jobs are what California needs most right now.

At the Redding hearing on chloropicrin, a staff person for an Assembly representative highlighted the extreme poverty in the region:

We need every job, we need every business, and we need to work together to find solutions that instead of just thinking about one side, look at what is business-friendly and what can keep these, these growers, these family growers in business, because that's the thing that drives the economy, and we are desperately hanging on to every job that we have here and hope that we can do something to make sure that we ensure that these communities prosper in these very difficult times.

Farmworkers themselves occasionally took this position, as well. Speaking at the methyl iodide workshop, a farmworker stated:

I am here in a show of support. There is a lot of unemployment where I live because there is not enough harvest. Because they are not allowing or approving fumigation. And I am here to support this because my family is devoted to the fields. I know that fumigant is dangerous because it is harm, but people need to work. Because all the people from where I am from, they do this and nothing else. And now since they've taken the water away, there is even less production. And it is not true that they put you to work right after they fumigate. Like a week or two weeks go by before they put you to work.

Other commenters appeared to speak directly on behalf of farmworkers. A labor contractor speaking at the methyl iodide workshop noted that he employed “over 20,000 people a year” and that “any decisions that are made, especially with legislation, affects our people, affects their life style”. A grower advocate we interviewed who had participated in these debates claimed that “the workers I’ve talked to would rather have jobs so they can feed their families; they’re not worried about getting cancer”. Putting a finer point on the issue was the president of the California Strawberry Commission, speaking at the Assembly Health and Environmental Safety and Toxic Materials committee meeting:

As a farmworker employee we optimize every day in the calendar to make money to bring home money so we can pay our bills. Every day is crucial during the season. And when you have a field that is infected with some soil disease the plants are wilting, very limited fruit on the plant, it’s an obvious choice [to fumigate]. Many workers will come to me and say “we can’t make it here”. They’re in one crew that has more of that percentage of that infected area and they’re saying “this isn’t fair ... we need fields that are producing to make money” ... So clean soil is integral to the farmer of course, but the worker is being forgotten here. They have to make a living. And each year there are a certain amount of days they can do that it. They optimize the days.

What he was effectively suggesting is that growers need to fumigate so that harvest workers earning money on piece rates, the industry norm, can make enough to live on. This is not a one-off comment, and it is a point to which I will return.

Just as the industry did not entirely dismiss issues of health and safety, the activists did not entirely dismiss issues of livelihood but, rather, suggested that health and safety trumped livelihood. Comments in this vein, not surprisingly, came from groups close to workers or from workers themselves. For example, the head of the Monterey County Central Labor Council said the following at the Monterey County Board of Supervisors meeting:

As an organization that represents farmworkers and working families, health is most important to us, not just for the field workers, but also the families that live up and down this valley. Having been a son of a farmworker and seen the use of chemicals in the fields, I know the importance of what agriculture does to our community economically. But in the end, the whole debate ... is the balance of safety with profits.

Speaking at the Salinas chloropicrin hearing, a representative from Lideres Campesinas, an organization that focuses on female farmworkers, urged that chloropicrin be withdrawn altogether. As translated:

We know that the strawberry industry is a good source of income for our people, but it’s time to make a change. We don’t want any more ill people. I’ve heard that without the chloropicrin, the strawberries go bad, and there are people who will be jobless, and I ask myself: do we want healthful strawberries, or do we want ill people?

Making the point even more strongly was a UFW representative who spoke at the Monterey Board of Supervisors meeting:

The biggest negative effect is for those strawberry field workers who work there every day. This also means that pregnant farmworker women who have to work in those fields are risking to lose their unborn babies. We cannot afford more cancer in our communities; we cannot afford women having abortions that they did not plan for. We cannot afford the risk of having new born children born without hands, legs, backbone, without brain. I have seen many of those cases in my life. We don't believe any amount of money should be bigger or more important than having safety and security in our communities and in the fields that we work.

\* \* \*

That the debates on chloropicrin and methyl iodide were nearly identical and highly polarized around the themes of lives versus livelihoods was lost on no one, including the grower quoted in the opening epigraph. For the industry, polarization was a problem in itself and several spokespeople commented that the debates were “divisive” and “hurtful to the community”, suggesting that what is good for business is good for everyone. For the activists, the idea that industry could speak for the community appeared a problem, and several comments suggested that the industry's concern with jobs was wanting. Speaking at the Redding hearings, someone from a local activist group was utterly dismissive of industry concern with jobs at the same time he emphasized the exposures to residents typical of an environmental justice frame:

OK, I understand it's a multi-million dollar business, I understand that it produces a lot of jobs. You never once, representative for the assemblyman, never once mentioned safety. You always mentioned jobs. Jobs, jobs, jobs. Okay, how 'bout safety? You say it's a multi-million dollar business—how about the medical costs associated with the people that are exposed to these chemicals? You never take those into account, do you? You only think about jobs. And if you guys think that hey, oh, these levels aren't toxic to the people that live there, you can come to my house anytime they spray—I will give you three square meals a day—you come and hang out, see if it's toxic or not. Anybody willing to take me up on that? That's what I live with every day.

In short, throughout the debates both sides chose to emphasize lives or livelihoods but never both, as if each had a stake in keeping them separate. This was particularly striking for the activists who were otherwise sensitive to farmworker injustice, but largely drew on an EJ analytic which focuses on unjust exposure, even when, in this case, unjust exposures were justified in the name of earning a wage. The question is what makes certain bodies disposable in the first place. For one answer, I turn to a relatively recent literature on surplus and disposable populations which suggests that disposability lies in this very separation of lives and livelihoods, both conceptually and historically. In making this point, this literature thus also provides some purchase for understanding how heretofore disposable workers might come to be valued.

## The Making of Disposability and the Possibility for Recognition

As articulated in debates over fumigants, lives versus livelihoods seems to make a stark contrast between life as participation in the wage economy and life as health and well-being, or at least the body's ability to carry on and not suffer early death. At a cursory level, these distinctions map onto apparent differences between Marx and Foucault. Marx, for example, emphasized how processes of primitive accumulation that separated laborers from their direct means of production and reproduction made participation in the wage economy the basis of survival. Yet, while Marx saw the separation of life and livelihood into separate spheres, he by no means suggested that one could do without the other. To be sure, he saw the wage as essential to life, for the wage allowed the reproduction of the working body as well as for the working class as a whole. Such reproduction made future exploitation, and hence profits, possible. For his part, Foucault's concerns with life were never distinct from capitalism. In *The History of Sexuality*, for example, where he spells out his ideas of biopower, he argued that protection and improvement of the population became an exigency of the modern state precisely to ensure productivity for the health of the (capitalist) economy (Foucault 1985). Applications of biopower included not only those strategies that controlled environments, but also those that would allow the worthy to live more healthily and vigorously, through the provision of life's needs (Foucault 1997:241). That Foucaultian biopower was not about the production and protection of life itself for life's sake, but for what was economically useful, is quite evident in his distinction of the population, those who were "made to live" from the people. For those who were discarded, or "let to die", were precisely those who were not economically useful or represented some sort of threat to the population (Dillon and Reid 2009). At least on the question of lives and livelihood, Foucault and Marx had different emphases, but they were not in opposition, and neither would say that lives and livelihoods are separable.

A rapprochement of Marx and Foucault is at the core of recent work on surplus populations that usefully sheds light on how lives and livelihoods have become practically attenuated. Scholars writing on this topic note how Marx divided surplus populations into latent, floating, and stagnant, distinguishing those with insecure employment from those with no chance of getting a job and thus of no use to capitalism (Li 2010; McIntyre and Nast 2011). Those in the last category are quintessentially Foucault's biopolitical others, "let to die" because they are not waged workers nor have the insurance mechanisms of the "mass, consumer societies" (Duffield 2006). Collard and Dempsey (forthcoming) extend this rapprochement to suggest additional orientations to lives (both human and animal), further distinguishing those who provide social reproductive labor that is useful to capitalism but is unwaged, and those who are threats to capitalist production and biosecurity who are made to die. Theorizing how such surplus populations came to be, Li (2010) posits that they are often subjects of incomplete primitive accumulation. As she notes, Asia, in particular, has seen massive enclosures, but no dialectical flip side of proletarianization.



Those working on disability make a somewhat different cut, differentiating those who are “officially valued” for their labor, even waged, but are otherwise of little consequence biopolitically (Gidwani and Reddy 2011; McIntyre and Nast 2011; Yates 2011). These “necropolitical subjects”, as McIntyre and Nast call them, are generally racially marked subjects who are useful as laboring bodies but whose future is not protected precisely because of the existence of surplus populations, as well as legacies of colonial racialization that has made such bodies ideologically less important or even threatening. As such, “little heed is paid to the needs of labor to reproduce itself. Instead, the overriding concern is to subject workers to the most accelerated form of exploitation possible to optimize profit” (McIntyre and Nast 2011:1472). Indeed the value of these laborers to capitalism is precisely because they have been constructed as disposable and thus readily left behind when they become sick or less productive (Wright 2006:49).

In these renderings of disability, focused on hyper-exploitation, the idea is that wage labor is so hard on the body that it gets used up. Elsewhere, disability is indicated in bodies that are poisoned in the course of their work. Gidwani and Reddy (2011) discuss how the accretion of toxic e-waste in the new e-economy in India has created new jobs in waste salvaging for populations that are otherwise surplus. Crucially, though, their point is that having such populations already marked as disposable, as surplus, is what makes them employable in the job in the first place. Petryna (2004) says something somewhat similar when she writes about the people who went to work in the Zones of Exclusion after the Chernobyl nuclear disaster out of economic desperation. Undervaluing their own bodies essentially legitimated the higher levels of toxic exposure these workers then experienced. In all of these accounts biopolitical unimportance precedes employment in toxic industries. This, I think, is a different way of conceptualizing work-related toxic exposures than an environmental justice perspective that begins its analysis with an act of racial discrimination at the site of employment.<sup>5</sup> And given the centrality of surplus populations in this work, I think, it is also a more useful framework for understanding the changing situation of California farmworkers.

For a long time, California farmworkers have occupied a liminal status, valued for their labor while for the most part biopolitically discarded (Getz et al. 2008), that is, they are classic disposable workers.<sup>6</sup> They have become so very much through processes of primitive accumulation; dispossession in Mexico and further south has been more or less accompanied by the pull of jobs in the US, spatially attenuating production and reproduction across thousands of miles. Central to the production of both their indispensability and their disability, however, has been US immigration and border policy.

These policies have made for an easily exploitable other, constructed most saliently though the Bracero guest worker program which codified wages levels that white workers in the US would never appear to accept, thereby ensuring profitability and making Mexican migrants the agricultural work force of choice (Mitchell 2012). At the same time, this border constructed those attempting to cross as biological threats, from carriers of disease and vermin (Stern 1999) to a drain on health and education resources putatively meant for citizens (Chavez 2001). The last few decades of continued fortification and militarization of the border under

the guise of preventing “illegal” immigration has accelerated the making of both dispensability and disposability (López 2007; Nevins 2001); that is, the border has forced those desperate for work to cross under increasingly dangerous conditions, putatively as deterrence (De Leon 2015). Fear of deportation has further suppressed wages and encouraged workers to forego reporting of pesticide and other work violations, making those who cross all the more desirable as workers (Harrison 2011; Holmes 2013; Mitchell 2012; Nash 2004). In these conditions, they have been let to die in many senses of the term.

Crucially, though, disposability has mainly rested on labor surplus, which is why some of the most important worker protections came in the 1970s, a time of labor shortage (Jain 2006; Pulido 1996; Wells 1996). Today, however, many strawberry growers are apparently experiencing a new labor shortage, precipitated in part by the ever-tightening border as well as competition from less strenuous crops and non-agricultural employment. Their vehement complaints have certainly garnered the attention of the news media, exemplified in a recent piece in the *Wall Street Journal* on labor shortages which features the California strawberry industry (Brat 2015). Through my own research, I have learned that growers see the labor shortage as a greater challenge to the future of the industry than fumigant regulation (Guthman 2016), at the same time that they justify the use of fumigants, as we saw, by saying that workers can earn a living only with high-yielding plants. Ironically, then, the tightened border that has so deeply benefitted the industry appears to be creating a condition that has made those who have successfully crossed, as well as their children, all the more essential. In that context, it makes little sense for industry to treat farmworkers as disposable by neglecting the health effects of pesticides. And so it makes little sense for activists to dismiss industry concern with farmworker employment when a shortage provides a new platform for making the case against fumigants.

## Conclusion

This article has reported on the regulatory debates over the use of a set of chemical fumigants of crucial importance to California’s strawberry industry. I have shown that the industry has defended their use under the assumption that a loss of these “tools” would cause great damage to the industry and precipitate massive job loss, especially among farmworkers. Activists have challenged their position along typical environmental justice grounds—arguing that use of these chemicals is far too detrimental to human lives and that existing protections are inadequate to protect nearby residents and, also, farmworkers.

My argument has been that the lives versus livelihoods trope that has so defined the debates over soil fumigants works neither analytically nor strategically. Analytically, it is based on a non-dialectical conception that contrasts life as participation in the wage economy and life as health and well-being, disregarding that the purpose of livelihood is to live and living takes money. The extent to which livelihoods have been disarticulated from life is a product of pernicious historical forces, including the creation of massive surplus populations, which have enabled capitalism to accelerate the extraction of labor power from life—and, for that

matter, to poison bodies that work, because other bodies are always available. This analytical separation, in other words, has underpinned worker disposability and thus made it thinkable for industry to express care about jobs more than lives.

Strategically, adherence to the separation of lives and livelihoods was a missed opportunity for activists to call the question in these debates on industry's new found commitment to workers, especially since chemically intensive production systems provide even more jobs, as growers often lament. Still, the changing circumstances of the US–Mexico border provides new opportunities for activists moving forward. For if, indeed, the border is thwarting migration and the production of surplus workers, the industry would do well to pay attention to farmworker health, to stop fighting mitigation measures and worker protections (which not all growers do), and redouble their efforts to develop and transition to less toxic production regimes. Especially in light of new knowledge that many of these chemicals have intergenerational effects, the case could be made even more strongly that farmworker lives matter for industry. After all, continued access to healthy, laboring material bodies is what materializes those strawberries into money.

For that matter, to the extent that toxic fumigants have been justified as a way for harvest workers working on piece rates to make more money speaks not only to industry disregard for life but also the insufficiency of wages. This practical example of the inseparability of lives and livelihoods is perhaps the best reminder of the need for EJ activists to engage the circumstances in which workers are recruited, disciplined, and remunerated. In the final analysis, farmworker livelihoods matter too, and with health more generally predicated on adequate income, they matter for farmworker lives in myriad ways.

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## Endnotes

<sup>1</sup> Interestingly, the etymology of “livelihoods”, according to the *British Dictionary*, stems from an alteration of *livelode* a “means of keeping alive”.

<sup>2</sup> This is not to say that activists were non-strategic; the victory against the fumigant methyl iodide showed undeniable strategic acumen (Guthman and Brown 2015b).

<sup>3</sup> Several environmental historians have also written on workplace exposures. They share an emphasis on the politics of knowledge, and hence science, in determining exposures (Murphy 2008; Nash 2004; Sellers 1999).

<sup>4</sup> Actually, Harrison (2011) would be the exception here as she would argue that industry's claims also appeal to justice, albeit a justice revolving on utilitarian ethics.

<sup>5</sup> Following Gilmore (2002), it is about already existing vulnerability to premature death.

<sup>6</sup> That said, these days farmworkers are generally able to send remittances home to Mexico, suggesting that their wages go for at least a modicum of social reproduction.

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