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Toxic freedom: how middle-class seasonal fruit pickers perceive and manage agrochemical exposures

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ABSTRACT

In a global agricultural context that is more chemically dependent than ever, occupational exposure to pesticides typically maps onto entrenched inequalities. Existing research has documented the health hazards of agrochemical exposure facing predominantly low-income, racialized farmworkers. Yet some young middle-class people in wealthy countries are intentionally pursuing informal seasonal farm jobs. How do workers in social positions that typically protect against workplace vulnerability manage the uncertainty of toxic exposures? This study draws on ethnographic observations and in-depth interviews with French, English and Spanish-speaking domestic and international farmworkers in British Columbia, Canada. I identify three pathways by which farmworkers perceive and manage agrochemical exposure: informal bodily evidence, individually managing risks and rationalizing exposure. This article introduces the concept of 'toxic freedom' to show how workers may downplay workplace risks by framing pesticide exposure as a reasonable trade-off for personal autonomy, countercultural idealism and temporary youthful adventure. This research underscores why individual-level agricultural health and safety interventions may be limited in protecting workers from harmful agrochemical exposures. Rather, it signals the opportunity for policy interventions such as stronger pesticide regulation, proactive spot inspections, higher penalties for non-compliance, and clearer channels for farmworkers to have a collective democratic voice in the workplace.

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Introduction

Exposure to harmful chemicals has long been a fact of life for people in precarious, low-prestige and poorly paid jobs. Workplace chemical exposures typically map onto deep-seated social inequalities that allow certain orders of life to be reproduced into the future at the expense of others (Liboiron, Tironi, and Calvillo 2018). This exposure to toxicants includes not only workers, but also their children, surrounding communities and future generations (Griffith et al. 2019). Despite efforts in recent decades to advance food system sustainability, pesticide use has expanded swiftly around the globe. Farming is now more chemically dependent than ever (Shattuck 2021a). This expansion has led to increasingly prevalent occupational exposure for many agriculture-dependent communities in the Majority World, which often lack strong regulatory and health surveillance systems (Shattuck 2021b). Agrochemical regulations tend to be more stringent in Global North countries. Yet an agricultural policy context that skews heavily in favour of stabilizing capital accumulation means that here, too, workers often navigate the potential hazards of workplace chemical exposure in highly unequal and individualized ways (Guthman and Brown 2016).

Citizens in wealthy countries normally eschew working as a farmhand because of dangerous conditions, uncompetitive wages and occupational stigma (Weiler,

Sexsmith, and Minkoff-Zern 2020). Some young people, however, are bucking the trend and purposefully electing to work as seasonal farm labourers (Levkoe and Offeh-Gyimah 2020). Pursuing jobs or internships in ecological agriculture, specifically, can offer non-material rewards like the social status conferred by performing certain environmentally friendly practices (Kennedy 2022). These pursuits mirror similar paths carved out by young workers who deliberately select sources of income that may involve voluntary downward social mobility, but that also offer flexible opportunities to combine labour with life projects such as travel (Tsai and Collins 2017). Young workers' hunt for idealized flexibility and autonomy coincides with an employment context in many parts of the world that is dominated by weak labour protections, scant employer obligations to the working class and highly individualized worker responses to shared struggles in the world of work (Kalleberg and Vallas 2018; Sullivan, Goods, and Smith 2022).

Previous studies on young people from non-farming backgrounds who take up jobs or internships in agriculture have focused on the organic and ecological farming sector. The sector tends to overrepresent workers who are university-educated, middle-class and white because of both cultural and material reasons, such as the expectation in ecological internships of

working for little to no remuneration (Levkoe and Offeh-Gyimah 2020). Yet many such workers may not subjectively perceive themselves as being exploited, in part because of non-economic rewards such as pursuing environmental sustainability (Ekers et al. 2016). Meanwhile, proponents of sustainability-oriented farms may mask and justify precarious employment by pointing to the putative virtues of their efforts to realize social change (Weiler, Otero, and Wittman 2016). I depart from this existing research by focusing on the environmental risk perceptions of workers who enthusiastically pursue jobs chiefly on farms that are not trying to achieve environmental and social justice, and that may apply toxic pesticides.

This article draws on a case study of seasonal agricultural workers in British Columbia (BC), Canada, who come from primarily middle-class backgrounds, and who usually present as white: 'pickers' and 'backpackers'. Pickers are Canadian citizens, who are mainly Francophones from Quebec. Backpackers refer to international visitors on holiday or working visas. Pickers and backpackers may work alongside racialized guestworkers, who are hired from poorer countries on temporary visas and constitute a growing proportion of the workforce (Zhang, Ostrovsky, and Amelie 2021). Before the COVID-19 pandemic, employers in BC's agriculturally rich Okanagan Valley estimate that each season they were hiring 1,500 Quebecois pickers, 1,500 backpackers and 4,500 guestworkers (CBC News 2020). Pickers and backpackers stand out compared to guestworkers because they seemingly have far greater freedom to sell their labour power to the employer of their choice, combine work with leisure and challenge undesirable workplace conditions. How do people in social positions that typically protect against workplace vulnerability perceive and manage the uncertainty of toxic agrochemical exposures?

From a theoretical perspective, this study is significant because it speaks to the larger sociological puzzle of how people's subjective perception of hazards relates to their exposure to actual, objective risks. When it comes to perceiving environmental risks and supporting ameliorative policies, people's subjective perceptions matter far more than their exposure to actual environmental risks (Mayer et al. 2017). Workers in the new millennium face a potent ideological emphasis on individual worker autonomy, which can make it challenging to grapple with collective realities of precarious employment and ubiquitous low-dose exposures within and beyond the workplace. Further, workers who are not traditionally regarded as vulnerable may face distinct challenges both with accessing protections to mitigate chemical harm and accurately perceiving threats to their own bodies (Murphy 2004). Farmworkers' efforts to protect themselves are shaped more by their perception of how much control they have over pesticide exposure than

their perception of risk (Arcury, Quandt, and Russell 2002), and it is unclear how much control casual middle-class farmworkers feel they have over agrochemical hazards. From an applied perspective, this study probes the extent to which workers' personal demographic characteristics can buffer against occupational environmental hazards in an industry notorious for high rates of illness and injury, weakened labour standards and weak enforcement (Bamford 2015). As Murphy (2004) observes, 'Even systems of privilege can disappoint' (266).

I begin by establishing an analytical framework to make sense of how toxic exposures in the workplace are regulated, and how farmworkers perceive pesticide risks. Next, I describe methods based on in-depth interviews and ethnographic participant observation in BC's Okanagan-Similkameen region. This study identifies three main pathways by which agricultural workers perceive and manage the uncertainty of toxic exposures in the workplace: informal bodily evidence, individually managing risks and rationalizing exposure. From a conceptual standpoint, these findings shed light on how positive narratives of personal freedom and flexibility can make it difficult for workers to effectively push for measures to mitigate toxic exposures. I introduce the concept of 'toxic freedom' to make sense of how romantic narratives of freedom can eclipse the toxic risks that arise from a context of hyper-individualized employment. From an applied standpoint, this research underscores why individual-level interventions to enhance agricultural health and safety may have limited effectiveness in protecting workers from harmful agrochemical exposures. Rather, this study signals the opportunity for policy interventions such as tighter pesticide regulation, proactive spot inspections by agricultural compliance teams, higher penalties for non-compliance, and clearer channels for agricultural workers to have a collective democratic voice in the workplace.

Regulating risks of workplace toxic exposure

Contemporary legal frameworks governing workplace environmental exposure operate on the premise that workers have the bargaining power and economic security to make rational, informed calculations about the risks their bodies may incur. As Nash (2008) remarks, modern regulations of chemical exposure in the workplace partially reflect the legacy of axioms from the nineteenth century. It was broadly acknowledged that within the factory walls of some occupations, environmental conditions might be impure and expose workers to a high risk of injury or illness. However, it was considered rational for workers to exchange their physical suffering and deterioration of bodily capital in the workplace for money. The assumption that workers can either refuse unsafe

work or demand commensurate compensation, ‘has always been a shibboleth for all but the most privileged’ (Nash 2008, 655).

Prevailing scientific and regulatory responses to the pervasive presence of human-made chemicals are often rooted in the principle that the ‘dose makes the poison.’ This approach assumes there is a clear threshold level at which exposure is safe and low-dose exposures are benign (Vogel 2008). Yet harm from substances such as endocrine disrupting chemicals, which include certain pesticides, tends to be based less on extent of exposure than timing such as pregnancy (Vogel 2008). Further, chemical regulations often assume that prior exposure does not shape subsequent exposure, that the environmental conditions (e.g. smoke) in which exposure occurs have no bearing on the strength of toxicity and that all bodies are ‘pure’ and respond similarly to exposure (Even Chorev and Testa 2021; Nash 2008). Pesticide exposure can increase the risk of illness such as certain cancers, but such harms may not be manifested in the body until long after exposure (Pascale and Laborde 2020). In short, assumptions underlying modern chemical regulation tend to be at odds with emerging scientific understandings of how low-dose chemical exposure may act as a form of ‘slow violence’ (Nixon 2011).

In the case study site, several pieces of federal and provincial legislation and regulation pertain to pesticides. The regulation most directly relevant to worker pesticide exposure is the BC Occupational Health and Safety Regulation, which contains specific requirements for employers to protect workers from exposure (BC Laws 2023). For instance, before an employer uses a pesticide, they are obligated to make sure any workers in the vicinity are relocated to a safe area (unless workers are needed to apply the pesticides). The greatest source of pesticide exposure for agricultural workers is residual pesticide left on surfaces such as leaves that can be dislodged onto skin or clothing (Arcury et al. 2001). If workers enter fields that have been subject to pesticides when residues could contaminate their bodies and protective clothing, BC employers are also required to offer and maintain shower facilities, along with handwashing facilities. Training and pesticide certification are only required for workers who mix, load and apply certain agrochemicals. However, employers have obligations to inform other workers, such as posting conspicuous warnings signs before a moderate or very toxic pesticide or fumigant is applied. If a worker enters a treated area before a precautionary period has expired, an employer must ensure ‘the worker is provided with, wears and uses correctly personal protective clothing and equipment appropriate to the hazards’ (BC Laws 2023, 121).

Farmers in BC use pesticides such as organophosphates, neonicotinoids, and pyrethroids along with fungicides and carbamates, which are associated with

various adverse outcomes for human and ecological health (Band et al. 2011; Bishop et al. 2018; Wood et al. 2002). Focusing on three common and potentially carcinogenic pesticides, Rydz et al. (2021) estimate that 70–75% of farmworkers at risk of exposure in Canada were probably or possibly exposed to any of glyphosate, 2,4-D and/or chlorothalonil. Emerging research suggests exposure to common pesticides such as glyphosate may be more dangerous than previously believed (Bruce, Borlu, and Glenna 2022).

Notwithstanding workers’ rights on paper, enforcement of farmworkers’ rights by WorkSafeBC and the Employment Standards Branch remains a significant gap; these provincial agencies tend to take a complaint-driven approach instead of prevention and proactive, unannounced inspections (BCESC, BC 2022; Fairey et al. 2008). This pattern is mirrored in other Canadian jurisdictions and worldwide. Farm operations are widely treated as exceptional, ‘hyper-private domains’ that grant bosses exceptional power to determine on-the-ground workplace practices (Reid-Musson et al. 2022, 1027). Because government compliance agencies for agrochemical exposure are typically under-resourced, violations are often undetected and unprosecuted (Bamford 2015; Bruzelius and Seeleib-Kaiser 2023).

Perceptions of pesticide risk

While the exploitation of migrant and immigrant farmworkers in North America is well-understood (Preibisch and Otero 2014), seasonal ‘pickers’ from Quebec and international ‘backpackers’ present a more complex case. In the 1970s, the BC government had helped growers address local labour shortages by advertising romanticized images of the Okanagan Valley to Francophone youth, although today employers prefer racialized guestworkers with less freedom of mobility (Tomic and Trumper 2016). Pickers have Canadian citizenship, are typically white, bilingual and middle-class. Backpackers, who tend to arrive in Canada as international visitors, are generally middle-class travellers from places such as Latin America and Western Europe.

Existing research presents several insights into how agricultural workers perceive potential threats to their bodies from agrochemical exposure. First, farmworkers tend to be mainly concerned with immediate consequences of pesticide exposure, with limited knowledge of chronic exposures, residues and possible long-term effects (Arcury, Quandt, and Russell 2002; Bamford 2015). Second, workers are inclined to believe that sensitivity is individualized, with some people intrinsically more immune and others more susceptible to harm (Arcury, Quandt, and Russell 2002). Yet embodied experiences are not clearcut indicators of harm. Conversely, the absence of obvious, immediate bodily symptoms does not necessarily prove the absence of

harm (Liboiron, Tironi, and Calvillo 2018). Third, agricultural workers differ in their beliefs on whether pesticides are worrisome or potentially harmful (Arcury, Quandt, and Russell 2002; Bamford 2015). Research on both foreign-born and domestic-born farmworkers underscores a widespread reluctance to complain, with some expressing a sense of powerlessness and fatalism in the face of agrochemical risk (Bamford 2015; Campbell et al. 2019). Although they did not focus on pesticide exposure, Campbell et al. (2019) found Italian migrant workers in agriculture and food service downplayed underpayment and mistreatment because they believed their job was a temporary stage in life with little bearing on their longer-term career. These insights raise questions about the cognitive and physical strategies used to manage pesticide risk among workers who are assumed to have greater individual control within the workplace.

Methodology

To investigate how workers in social positions traditionally seen as protective against workplace vulnerability perceive and manage toxic workplace exposures, I engaged in a regional case study of fruit pickers in the Okanagan-Similkameen agricultural region in southern British Columbia. The study design was based on a regional political ecology approach (Galt 2016). This region is part of the traditional land of the Syilx Indigenous people, whose territory extends across the Canada-US border into Washington State.

This article draws from 23 in-depth, semi-structured interviews and participant observation primarily in 2017, with some follow-up fieldwork extending in 2019. With University of Toronto research ethics approval, I conducted the interviews in person in French, English, or Spanish, deferring to participants' preferences; one interview was conducted remotely through video-conferencing software. I use pseudonyms throughout. Interviews ranged from 45 minutes to just over two hours, and participants were offered a cash honorarium.

Fifteen participants were Canadian citizens, primarily from Quebec, and eight were international visitors from Europe and Latin America with various types of immigration status other than the Temporary Foreign Worker Program visa. Pesticides were only one point of discussion in the interviews, which encompassed other environmental and labour issues including wages, wildfire smoke exposure and sexual harassment by employers. Most participants were in their 20s, but their ages ranged from 20 to 57. Although participants were not asked to self-describe their socioeconomic status, other markers suggest many of them were broadly middle class; most had at completed least some post-secondary education and described their work

in BC agriculture as driven by a desire to earn an income while pursuing lifestyle goals instead of brute economic compulsion. Ten participants were in their first year of working in BC agriculture, and the remainder represented a range of experience up to 12 years. Participants typically worked on multiple farms over a season.

Alongside interviews, I engaged in participant observation while living and working in the Okanagan-Similkameen region for six months in 2017, and during subsequent visits. Participant observation included taking fieldnotes while engaged in local events such as farm tours, informal meals with farm workers, municipal consultations on housing, supporting migrant agricultural workers as a volunteer with a local migrant justice organization and as a hired orchard worker for two weeks on a small organic orchard. Drawing on the thematic analysis approach described by Braun and Clarke (2006), I analyzed interview transcripts through initial inductive coding followed by deductive coding in MaxQDA software, which I used to select interview excerpts that represented broader patterns described below.

Findings

Based on my interviews with pickers and backpackers, pesticide exposure was common. On non-organic farms, all but one participant reported having personally experienced pesticide exposure. Two others worked on an organic and transitioning-to-organic farm, respectively, and had no exposure history. Common types of exposure included smelling pesticide residues dislodged from crops onto one's body or clothes. Thirteen participants saw and/or felt pesticides being sprayed in a nearby row or onto their tents.

My findings underscore that the primary way workers came to perceive hypothetical pesticide exposure as a real risk that could personally affect them was through their bodily senses after unanticipated exposure had occurred. They relied on this informal evidence because of minimal or absent formal communication from industry or government about the names of the chemicals they were encountering, any dangers and how to mitigate potential harm. Second, those who worried about exposure overwhelmingly managed hazards in highly individualized ways. Third, even though pickers felt they had not 'consented' to chemical exposure, many downplayed, rationalized, or expressed ambivalence about the risks.

'If cancer could smell, it would smell like that.' gauging risk through informal bodily evidence

Occasionally, workers could name the substance their bodies encountered (e.g. Roundup, calcium, lime

sulphur, wax on cherries). In most cases, however, they were completely uninformed about the substance or any associated risks. Workers lacked clear, accurate and formal communication from employers, managers ('crew bosses'), or regulatory authorities about the agrochemicals they were encountering, even when pesticides were being actively applied two rows away. Consequently, pickers had to piece together their own risk assessment based on their informal embodied experiences, which could be inconclusive. Pickers tended to become aware that they had been exposed to agrochemicals through bodily evidence that ranged from mild to more acute. They reported bodily data such as smelling a persistent artificial odour on clothing and hair, rashes, and becoming more sensitive or 'allergic' to pesticides over time. Second-hand stories and third-hand rumours also filled the gaps in transparent risk communication. Two pickers shared stories of immediate coworkers who had been hospitalized due to respiratory issues from direct exposure. One participant reported that when he and his coworkers were exposed to pesticides, his throat swelled, and he observed his coworkers vomiting. Most firsthand accounts of exposure involved mild forms of bodily data. However, Brandon, an Anglo-Canadian picker in his 20s, shared a more dramatic, severe account of embodied evidence. He had been walking along a highway that abutted an orchard when he inadvertently got doused:

It was weird because I didn't even see the guy that was spraying until after I already got doused, and I felt it all along the side of my body. I was itchy, but I got like a concentrated amount in my eye ... I don't even know what chemical it was ...

Like, at first it as just itchy and really sore to the touch. Then the next day, I couldn't even open my eye because I slept, and the mucous that it had produced went all around my eye and then hardened my eyelashes together ... I was borderline ready to go to the hospital.

Brandon's account of accidental pesticide drift was unambiguous and included visual evidence of the person who sprayed him. By contrast, other pickers described becoming aware of their contact with pesticides because of trace bodily evidence, such as a persistent artificial odour in their clothes and hair. Olivier, a Quebecker who had been cherry-picking in BC for twelve years, noted that he had only experienced one incident a long time ago of being 'very close' to pesticides applied in a nearby field, but that odour provided reminders of invisible contact with agrochemicals: 'Generally speaking, we know pesticides are there. It stinks, and there isn't much you can do about it.' When I asked him to characterize the odour, he explained:

There isn't really anything I can compare it to. It's very strong, and it really smells like chemicals. Mainly it's in clothing, actually. You don't perceive it much while you're working. At the end of the day, you take off your clothes, and when you put them back on the following day, you get these wafts of smell [*drafts*] from your clothes. Like, I've just washed my laundry three times, and it still smells. If I put my laundry in my car, the car will smell like pesticides ... it'll penetrate your clothes really powerfully.

Likewise, Léa recounted the smell pesticides left in her hair and clothes even after laundering. She was a 21-year-old who had finished CEGEP (Quebec's publicly funded college system) and was in her second season of picking. Whereas Olivier equivocated in terms of whether pesticides worried him, Léa expressed that the smell worried her 'A lot. A lot,' noting that 'It's so bad I could not work.'

It was very disgusting to me. I can't put up with that ... It's just not natural. There are those who don't mind. But as for me, I don't think it's worth going through that for the amount the job pays.

The lack of communication from employers and government even about relatively benign agricultural substances left incertitude about whether certain types of bodily data signalled cause for concern. Most pickers viewed the 'yucky and black' stain on their hands after a long day of picking as embodied evidence of toxic exposure that was not attributable to dust alone, and one picker contrasted the colour with his experience working on an organic farm. However, another participant believed it could also be from more benign agricultural substances such as calcium. Sarah, an Anglo worker from Ontario in her first season, described the anxiety of not knowing whether a given chemical could be either harmless or more serious. While thinning apple trees, she worried about an unknown powdery 'white chemical stuff' on the fruit entering her bloodstream through a cut; growers can select from various chemical products to thin apples that range from nonthreatening to more hazardous (BCTFPG, BC 2015; EPA 2016). On Sarah's third day picking cherries on another farm, a supervisor drove by on a tractor two days in a row and applied a weed killer while she and co-workers were working. Her partner Mathieu told her he had seen a label for Roundup (glyphosate):

Oh, just being sprayed with pesticides while I'm working without any knowledge of what they're spraying or any prior consents or explanation, 'This isn't going to hurt you.' That was very offensive. I was kind of shocked when that happened ... I was like, 'Okay, thanks. Thanks for spraying me with unknown pesticides.' I think they should at least tell you what they're doing, you know?

Sarah emphasized that her central concern was the lack of prior, informed 'consent' to this exposure, given the absence of prior warning or formal

messaging about chemical risks. Sarah noted that it was difficult to ask her boss for information about the exposures because of the informal, 'arbitrary' nature of the no-contract job, which included a series of frustrating delays in receiving compensation and no ultimate guarantee of payment: 'You're sort of intimidated when you're working for them.' As Sarah explained: 'You don't want to cause a fight with him because you've been working five days and you want to get paid for those five days.' Smoke, another environmental hazard, offer insight on the limits of official warnings in the face of immediate economic needs. Much of this fieldwork was conducted in the summer of 2017, which marked BC's worst wildfire season to date. Alexandre, a 31-year-old worker from Quebec, commented that the smoke was 'atrocious' and 'worse than cigarettes', but that he was obligated to ignore warnings on public health websites not to engage in strenuous outdoor exercise: 'Because Canada is very beautiful, but we're still in a capitalist system. If you don't have money, you can't put food on your table, you can't do anything.'

Other workers echoed the lack of knowledge about the names of products and accounts of spraying near their tents or while they were cherry picking, sometimes without advance warning. Audrey, a 22-year-old Quebecois picker who was completing an undergraduate degree, attributed skin rashes to pesticides. Vividly underscoring her bodily experience, she noted, 'You can feel it [pesticide exposure] ... it's blowing your nose, and it's black.' She described her experience of unexpected exposures:

Sometimes it'll be the distribution of pesticides near the tents. It has happened a few times ... it does happen. These are things that happen ... For pesticides on apples, on fruits, on clothes, everything can be felt. It smells of pesticides. Clothes should be washed two or three times. And it's the black arms, it's the black hands ... it's all dirty. It's dirty legs, dirty hair, it's dirty face ... You eat a fruit, you can clean it, everything is full of pesticides in a field. You can feel it, basically, when you work in a tree.

Thomas, a 26-year-old picker from Quebec, felt such exposures were deeply disrespectful on the part of bosses. When I asked him to describe the smell, he declared: 'If cancer could smell, it would smell like that.' Accounts from workers like Thomas and others underscore how workers know they are being exposed to agrochemicals and resent the lack of informed consent to this incursion on their bodies. Typically, workers cannot gain reliable information about the health risks or even find out the name of the product. Amid this uncertainty, pickers must mediate their perceptions of chemical risk through bodily data and rumour.

Workers manage risks of agrochemical exposure in highly individualized ways

My second finding is that pickers managed the risks of agrochemical exposure in individualized, makeshift ways. This individualism persisted despite the exceptional companionship I witnessed. For many pickers, a highlight of their seasonal work in BC was the sense of joy and freedom they derived from being part of an international and Quebecois community with an adventurous, non-conformist lifestyle. They derived strong camaraderie from clicking on their headlamps to groggily begin harvesting at 4am, throwing cherries at each other while singing Québec Redneck Bluegrass Project tunes from the treetops and cracking open cold beers at the end of a long day of work. Pickers also swapped information about new job opportunities and bad bosses known for sexual harassment. In rare instances, they exerted their bargaining power collectively, such as an ad hoc farmworker group that engaged in provincial advocacy regarding the piece rate wage. Brandon relayed a story of a boss who refused to pay him and a dozen other workers for two weeks of cherry picking; they decided to camp in front of his road, effectively blockading him. When the employer called the police, the authorities sided with workers, resulting in their successful payment of outstanding wages.

Yet when it came to managing the risks of environmental exposure, workers' responses were highly individualized. None of the workers I interviewed were provided with personal protective equipment or advice on how to mitigate any potential harm. Sarah brought her own soap to the farm to wash her hands of any potential pesticide residue, and others tied a bandana over their face or wore latex gloves. When asked if he received protection against chemicals, Thomas expressed:

No, but it's personal for each picker. Actually, it should be the boss, but since he's spraying us, I don't think he's going to provide us with the equipment to protect us. So, there are a lot of pickers who put on masks or just a bandana. Personally, I pick all the time in long sleeves and long pants to have as little contact as possible with the leaves and all, but I still pick myself with my face in the leaves and my hands in there, so yeah. [Jà]

Thomas's comment underscores his lack of confidence in employers' willingness to protect workers, leading workers to adopt their own piecemeal protective strategies. Likewise, Léa expressed that in addition to obtaining workers' prior consent to work near pesticides, 'Workers should be warned to put on clothes that fully cover their bodies.' She declared that it would be 'incredible' to see either regulation to ban pesticides or prohibit the use of pesticides on farms that employ workers.

Pickers' freedom of mobility conferred a certain degree of power to individually elude agrochemical exposure through 'boycotting' non-organic farms, refusing requests for work they felt was unsafe or quitting. The capacity to engage in such acts of self-protection favoured pickers who had at least some financial buffer, and who were well-networked, skilled and savvy after unpleasant experiences in previous seasons. Participants noted that generally, those applying pesticides were employers or managers (often racialized recent immigrants), or migrant guestworkers with a temporary visa. In rare instances when they were asked to apply pesticides, Canadian citizens could more easily decline requests without fear of losing their job. Other pickers simply left the job after exposure. Theo, a Quebecois picker in his 40s with nearly a decade of picking experience, explained:

I developed an allergy to pesticides after five years. I started to bleed from my nose. I tried another orchard, and it was the same thing, so I just work in the organic ... Sometimes you make a bit little less money in cherries. But I know it's natural, I don't have the chemical effects of feeling bad.

Theo's experience illustrates how bodily evidence led him to perceive himself as more vulnerable to pesticides, prompting him to pursue an individualized strategy to avoid exposure even if it occasionally resulted in lower earnings. Conversely, pickers who perceived themselves as lacking sensitivity to environmental exposures expressed ambivalence about risks on non-organic farms. Noemie, a 20-year-old picker from Quebec, explained that she had contact with pesticides on two farms in BC. On the one hand, she emphasized that, 'It's dumb to have to use such chemicals.' On the other hand, she felt pesticide exposure did not entail negative health effects for her body:

Sure, organic is a lot more fun in the absence of pesticides. I'm personally not allergic to pesticides, but there are those who are very sensitive to it and have to wear masks ... It doesn't have any effect on me ... I'm not physically disturbed by it. I'm not sensitive to pesticides.

While she acknowledged other pickers might display symptoms of susceptibility to pesticides, Noemie perceived her own body as immune. Consequently, she was personally unbothered by working on farms she knew used pesticides.

Alongside efforts to mitigate or rationalize exposure on the job, some workers described a sense of alienation from the fruit they picked due to concerns about pesticide residue. Rather than a staunch conviction that agrochemical residues in food were hazardous to one's health, this tended to manifest as a mild sense of repulsion, disinterest, or fastidiousness about washing fruit thoroughly. Thomas explained, 'When you finish your day and your hands are black and really crusted,

and you tell yourself you've eaten that, it's not really appetizing.'

Chemical exposure is a rational trade-off for freedom

My third finding is that the immediate rewards of the picking lifestyle allowed pickers to downplay, rationalize or dismiss the hypothetical future health impacts of agrochemical exposure. Many workers I interviewed saw their seasonal fruit picking in BC as part of an exceptional, nomadic and ultimately fleeting life period, which made it easier to shrug off occupational health and safety risks. Some pickers voiced a sense of disenchantment and frustration at the limited wiggle room to pursue life-affirming activities within and beyond work. Their pursuit of a non-standard employment path, including fruit picking, was driven by both a rejection of the formal labour market and dominant societal norms.

To help me understand the emotional and social rewards of their countercultural lifestyle, Sarah and Mathieu, a young picking couple, invited me to join them for a party next to the river where they were camping for the cherry season: 'You can have wine with us and see what it's like where we live!' As we weaved our way to their communal campfire through scattered tents, willow trees and muted hand-drumming, I glanced up at the local landmark mountain towering across the river with its distinctive K-shaped geological face. Flipping between French and English, various pickers reflected on how the minimalist picking lifestyle allowed them to practice their values and transform themselves through a 'revolt' against capitalism and consumerism. While we passed around Cuba libres and vegan blueberry cheesecake on a frisbee platter, a picker accompanied himself on guitar. He playfully modified the lyrics to Bob Dylan's *Knockin' on Heaven's Door*: 'Mama, take these cherries out of me. I can't pick them anymore!' We all laughed. I was struck by the sense of companionship, idealism and appreciation for the stunning outdoor setting where they lived and worked.

While declaring how much they cherished the natural scenery and sense of liberty afforded by their informal living situation, Sarah and Mathieu also flagged that there were 'problems.' Sarah described how amid the lack of local shower facilities, locals would condescendingly advise pickers to use the river to bathe, despite the water being frigid year-round. During our interview earlier that day, Mathieu exhibited a sense of disgust at both human agrochemical exposure and water pollution. He further noted the weak government enforcement and lack of formal recourse: 'While we're working, we find they're spraying pesticides at the same time. And we can't complain, or do anything, really. It happens all too often.'

Yet Mathieu felt the degradation of his body was a rational trade-off for the relief of escaping the rigid constraints of a standard job:

It's pretty much like selling your soul to the devil for a little freedom. Because I don't see myself working a 9 to 5. I love my freedom. Having to get exposed to products like that is the huge price I pay for this freedom. The 9 to 5 is such a dreary life.

In addition to rationalizing the potential harm to their bodies as a reasonable price to pay for a sense of agency and autonomy over their time, pickers downplayed pesticide risks by characterizing their seasonal work as part of a transitory life period of limited consequence. Similarly, Ximena and her friend were picking fruit in BC while on summer holiday from their Mexican university. As Ximena explained, 'Well, since we're only going to be there for this time, I mean, I already feel that it's much [less] dangerous being in contact [with pesticides], right? If we were always here, well yes, I would be [worried about pesticide exposure].' Notably, many pickers returned for multiple seasons, particularly those from Quebec.

When I asked Thomas if he minded being around pesticides or exposed to pesticides, he explained:

Yes. It bothers me, but I'm aware that if I do this for, say two or three years, I'm going to be able to settle into a warm place and I won't need to work in the cherries anymore. So, I am like, ready to sacrifice a little health for a long life of happiness and no cherries to pick.

In short, Thomas regarded his seasonal fruit picking in the Okanagan-Similkameen region as part of a transitory, exceptional life period that would eventually pay off. Although pickers expressed wariness or aversion toward their agrochemical encounters, these stories of the self made it easier to rationalize such encounters as fleeting bodily 'sacrifices' that were ultimately worth the emotional, social and material rewards of the picking lifestyle.

Discussion

In the absence of formal measures, participants had to rely on their bodies as an informal siren to ascertain their practical and emotional responses to agrochemical exposure. This finding, along with some farmworkers' belief that chemical vulnerability was individualized, echoes previous research (Arcury, Quandt, and Russell 2002; Shattuck 2021b). When pickers were unexpectedly sprayed on their bodies or near their tents, they expressed outrage and anxiety at the lack of free, prior and informed consent. Simultaneously, it was easier for pickers to normalize or dismiss agrochemical encounters when they lacked obvious symptoms, did not know what they had been exposed to, and had 'chemical uncertainty' (Even Choren and Testa 2021) about whether it was

consequential. Pickers' firsthand experiences were supplemented by second- or third-hand horror stories about other workers who had been harmed by chemical exposure. Regardless of whether they were universally accurate, bodily data, stories and rumours played a potent role in mediating how workers understood and handled agricultural hazards.

Even though pickers in this study would not generally be considered vulnerable, participants described difficulty refusing unsafe work because of workplace-level dynamics. These dynamics included an informal employment relationship, weak control over conditions, poor information and feeling too intimidated to confront one's boss (Bamford 2015), which could be particularly challenging for international pickers without a valid work visa. Economic compulsion was not usually the main motivator for participants in this study, but it nonetheless informed some of their choices in grappling with chemical risk. Undoubtedly, such myriad pressures to accept bodily suffering in exchange for job-related rewards (Nash 2008) are intensified for migrant agricultural guestworkers in the same region, who face heightened economic stresses due to poverty and unemployment in their countries of origin alongside a precarious, employer-tied visa (Weiler, Sexsmith, and Minkoff-Zern 2020). Proactive state interventions such as stronger pesticide regulation or random spot checks by agricultural compliance teams could benefit all groups of agricultural workers, including migrant guestworkers (Fairey et al. 2008).

While policy interventions matter, this study underscores how *social* relations encourage workers to consent to their own exploitation so that capitalism can squeeze value from their embodied ability to work. I argue that positive self-narratives about individual freedom, idealism and youthful adventure helped workers feel as if they were impervious to or could shrug off any harmful consequences of toxic exposure. I suggest a new concept to make sense of such narratives: 'toxic freedom.' Toxic freedom describes how some workers downplay, rationalize, or dismiss toxic environmental risks on the job by narrating these risks through positive conceptions of personal agency and freedom. They see potential harm from toxic exposure as a reasonable trade-off for a sense of flexibility and autonomy. Toxic freedom can be understood as a response to hyper-individualized employment environment, in which collective working-class aspirations for liberty within and beyond the workplace have been largely diverted into individual life projects. Yet the remarkably high level of individual freedom farmworkers in this study had to live, travel and work where they pleased did not provide freedom *from* degrading conditions of chemical exposure. Nor did it provide freedom *from* the need to sell their labour-power to survive. Attending to these social relations illuminates

how, in any capitalist workplace, consent coalesces with coercion in contradictory ways (Purcell and Brook 2022).

Youthfulness may provide a distinct contribution to these dynamics of chemical exploitation. Sweet et al. (2022) surmise that because workers under the age of 25 are less likely to accurately gauge hazards and appreciate long-term implications, younger workers may be at a greater risk of being exposed to carcinogens on the job. Despite asserting that exposure was inconsequential because of the temporariness of their work, many farmworkers returned for multiple seasons. Workers' instinct to downplay pesticide exposure as an exceptional, transitory period over the life course echoes findings by Campbell et al. (2019), who explain how young Italian migrant workers in Australia framed wage theft as insignificant in the broader scheme of their life course plans. A core difference in this study is that agrochemical exposure can have significant consequences that emerge much later in life and inter-generationally (Mansfield et al. 2023).

Despite their widespread exposure to toxic chemicals, most farmworkers landed on a positive view of their choice to flee the standard employment relationship and associated societal expectations, even if only for an episodic, youthful moment of escape. The affective personal meanings workers derived from the picking lifestyle reflect a desire to alleviate the alienation associated with many jobs under contemporary capitalism, and to secure a sense of personal fulfillment, dignity and control. Farmworkers appreciated the perks of an employment relationship involving few mutual obligations between workers and employers. Dominant, internalized and positive 'common sense' conceptions of freedom helped elicit workers' consent to workplace and housing conditions on offer (Purcell and Brook 2022). Simultaneously, these positive orientations conflicted with their instinctive reactions against individual and collective experiences of agrochemical exposure.

Some pickers were conscious of the double-edged sword of their pursuit of freedom through casual seasonal picking. To reconcile the sense of disgust, worry and indignation they felt in the face of pesticide exposure, pickers emphasized their enjoyment of liberty and bucking rigid societal expectations. For some, the hypothetical harm to their future health was a reasonable trade-off for the more definite, immediate benefits of their lifestyle, which they perceived as short-lived even if many workers returned for multiple seasons. Despite the camaraderie many felt within the picker community, the heady individualism of toxic freedom eclipsed the kind of outrage and solidarity that would be required to collectively resist degrading working conditions (Purcell and Brook 2022). Toxic freedom provides workers with exhilarating emotional

rewards while ultimately allowing for the exploitation of people's bodily integrity.

Conclusion

How do people in social positions that typically protect against workplace vulnerability perceive and manage the uncertainty of toxic agrochemical exposures?

This article examined a group of domestic and international workers who consciously sought out seasonal fruit picking in western Canada's Okanagan-Similkameen region. My study considered Canadian pickers, who were predominantly young, white and Quebecois, and international visitors, such as university students combining travel with informal work. A limitation of this study is that it captured people's perceptions of pesticide exposure only at one point in time. Young workers might reflect differently on their experiences after life events such as pregnancy, or after delayed health effects that might be attributable to prior exposure. Researchers should also examine whether the proliferation of mask-wearing during the COVID-19 pandemic may have improved farmworkers' access to personal protective equipment. In addition, future research should account for farmworkers' political ideology, which can have a strong influence on environmental risk perception (Mayer et al. 2017).

This article contributes to understandings of how comparatively advantaged workers perceive and manage the uncertainty of toxic exposures when they intentionally seek informal jobs over other income options. In the absence of formal communication from employers or the state, pickers relied on firsthand bodily data to evaluate their risk of chemical exposure. They also tended to manage risks in highly individualized ways. These responses reflect a political-economic context with weak regulatory or enforcement capacity for basic workplace health and safety in farming, which disproportionately harms lower-income, racialized migrants and immigrants (Preibisch and Otero 2014; Weiler, Sexsmith, and Minkoff-Zern 2020). Yet demographic differences alone were insufficient to buffer farmworkers in this study from chemical exposure. From a policy perspective, this signals the need to target occupational environmental hazards in the agricultural industry as a whole.

I find that alongside economic pressures to earn a living, cultural forces played a significant role in constraining pickers' freedom from chemical exposure. Specifically, I present the concept of 'toxic freedom' to describe how workers downplay, rationalize, or dismiss pesticide exposure on the job by foregrounding a positive narrative about their pursuit of individual autonomy. For them, freedom involved a temporary youthful adventure, pursuing a countercultural values-based lifestyle and escaping what they saw as the constrictive obligations of

a standard employment relationship. Many participants regarded the indefinite and hypothetical future harm to their bodies from agrochemical exposure as an acceptable price to pay for more definite and immediate emotional, social and monetary rewards. This study thus sheds light on how positive, individualistic imaginaries of workplace freedom serve as a powerful resource for both maintaining a sense of personal control and a political ecology of pervasive toxicity.

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