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When Avoiding Chemicals Means Avoiding Others: Relational Exposures and Multiple Chemical Sensitivity

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Abstract: Multiple chemical sensitivity (MCS) is a contested environmental illness that can be debilitating and life limiting. Those with MCS develop an array of physical symptoms to doses of chemicals in everyday life that are currently considered safe for human health by scientific and political actors. (1) Background: The purpose of this project is to understand how people with MCS practice chemical avoidance, describe MCS as a "relational illness", and understand the interactional strategies for navigating relational chemical exposures. (2) Methods: This is an ethnographically embedded interview project that consists of two field trips, thirty-three interviews, and content analysis of MCS materials such as newsletters, books, and websites. (3) Results: This article finds that personal protection strategies for chemical avoidance are insufficient in the case of MCS. By redefining the hazards posed by spaces and other people's bodies, those with MCS transform chemicals into an object of relational concern. This creates opportunities for other people to reevaluate their own chemical relationships and accommodate those with MCS, but it can also lead to denial, dismissal, and social exclusion. (4) Conclusions: This work on demonstrates that chemical contamination is an issue of interactional concern and adds to the literature on contested illness and relationships.

Keywords: environmental illness; chemical exposures; relationships; multiple chemical sensitivity

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1. Introduction

> "You have the power to reduce or eliminate the disability and make the [multiple chemical sensitivity] sufferer's life bearable and even productive, or you can also increase the disability, which ultimately can lead to distressing conditions such as isolation and poverty."
>
> L'Association pour la santé environnementale du Québec/Environmental Health Association of Québec

1.1. Multiple Chemical Sensitivity (MCS)

Multiple chemical sensitivity is a condition in which people develop physical reactions to doses of chemicals found in everyday life that are politically deemed safe (Coyle 2004). Due to its etiological uncertainty and lack of social legitimacy, scholars classify multiple chemical sensitivity as a contested environmental illness (Gibson 1997; Brown et al. 2004; Brown 2007). Medical studies and theories about multiple chemical sensitivity exist but are limited, lack funding, and have failed to arrive at a consensus. Some researchers believe multiple chemical sensitivity to be provoked by an acute chemical injury that sensitizes the body to future chemical exposures, often referred to as "toxicant induced loss of tolerance" (TILT), a concept put forth by immunologist Claudia Miller (1997). Others connect multiple chemical sensitivity to mast cell activation syndrome (MCAS), a rare and also understudied group of disorders that function in the body similar to allergies but present with multisystem symptoms (Akin 2017). Like with MCAS, any system of the body can be impacted by multiple chemical sensitivity, including the neurological, endocrine, and respiratory systems and symptoms can include brain fog, nausea and vomiting, laryngitis, sore throat, irritable bowel syndrome, rashes, fatigue, and/or anxiety

(Coyle 2004). Regarding chemical exposures themselves, the cumulative and interactional effects of toxins are understudied despite this being how our bodies are exposed to and experience chemicals. While site-specific risk assessment considers multi-chemical, multi-pathway risks, risk assessments conducted for the sake of regulating specific chemicals are conducted almost entirely in isolation (Lewis et al. 2011). As with other contested illnesses, multiple chemical sensitivity is primarily viewed by both medical practitioners and lay people as psychological, rather than physical, in origin (Kroll-Smith and Floyd 1997; Zucco and Doty 2021). This explanation is fiercely rejected by those with multiple chemical sensitivity who see it as pejorative, arguing that psychological or psychiatric intervention does not treat their condition, that this framing stigmatizes them and their experiences, and that this framing reproduces "hysteria" narratives about women's health (Gibson 1997; Sebring 2021).

1.2. Chemicals in Society

Synthetic industrial chemicals have proliferated in society since World War II and now saturate bodies, products, and ecosystems in novel ways (Russell 2001; Langston 2010). Everyone on earth, even newborns and people in geographically remote communities, has a "chemical body burden" of industrial chemical residues within themselves. Culturally, chemical pollution and exposures are simultaneously problematized and treated as unavoidably entrenched within modern life and our economic system. Taken broadly, chemicals can be implicated in most environmental crises, from the burning of fossil fuels that triggered climate change, to the disruption of nitrogen and phosphorus cycles through artificial fertilizers, to the mass deaths of pollinator species, to the poisoning of Black, brown, and poor communities around the world. Synthetic chemicals create both ecological and corporeal rifts (Foster et al. 2010). Increased chemical exposures through indoor and outdoor air pollution alone are linked to childhood asthma, cancer, cardiovascular disease, and other health conditions (Sze 2007; Manisalidis et al. 2020; Kim 2021; Kashtan et al. 2023). But even as scientists regularly uncover new information about the ways chemicals in our lives are harming our health (i.e., Kashtan et al. 2023; Knox et al. 2023; Smalling et al. 2023), this information is resisted, contested, and unevenly applied. Not all illness and health claims are seen as validly related to chemicals or environmental hazards (Brown 2007; Cable et al. 2008; Jacobson 2016) and in some instances, there is strong reason to think otherwise, like with the anti-vaccination movement (Offit 2015; Reich 2016). Relatedly, chemical avoidance can be overvalued and overdetermined such as when it is work mothers perform to ensure their children's safety at an individual level (Bryson et al. 2001; Cairns et al. 2013; MacKendrick 2018).

1.3. Personal Protection Strategies

Engaging with chemicals in daily life is a fraught issue. For some affected communities, chemical exposures are identified by both activists and scholars as part of a broader system of racial capitalism and state white supremacy and pathways often open up to environmental justice activism (Bullard 1990; Pulido 2015; Pulido 2017). For the environmentally privileged, strategies of personal protection from chemicals become just another contour of neoliberal life. The work of developing these strategies is especially the purview of mothers, adding to the labor of intensive mothering (Hays 1996). These consumer protection strategies are termed "precautionary consumption" (MacKendrick 2018) and "inverted quarantine" (Szasz 2007). Both concepts highlight the ways collective risks are internalized and promoted as having individual level solutions. Szasz argues that by focusing only on their own exposures people create an inverted quarantine around themselves whereby they attempt to live in an uncontaminated bubble within a polluted world. This contrasts traditional quarantines where a sick person removes themselves from a healthy world. In the inverted quarantine framework, the person is pure, but the world is toxic. Szasz argues these strategies create a false sense of security and are premised on a "fatalistic environmentalism" that resigns the practitioner to the state of the polluted world and seeks

only to protect the self and not others. This fatalistic environmentalism is antithetical to the environmental justice orientation, which focuses on collective action and community care rather than personal health gains (i.e., Cole and Foster 2001; Gilio-Whitaker 2019).

Further research on people enacting inverted quarantine finds that people do not derive a total sense of security from changes in lifestyle, but rather that these changes in consumption practices create a contingent boundary against chemicals; sometimes seen as effective and robust and sometimes as porous and vulnerable (MacKendrick and Stevens 2016). In order to manage this contingent control, people work to cognitively distance themselves from certain kinds of information (Norgaard 2011; MacKendrick and Stevens 2016). Precautionary consumption demonstrates that the underlying logic behind inverted quarantine is the individualization of risk. The precautionary principle states products should be proven safe by industry before they are released rather than proven harmful after the fact. This framework has not been legally enshrined by the United States government. In light of state inaction, consumers are left to manage exposures themselves, conducting themselves with behavior analogous to the precautionary principle at the level of the individual. This is seen in how individuals define environmental hazards, respond to them, and try to control their exposure to them. This largely takes the form of non-toxic shopping and food preparation, labor that, along with the related management of family health, is still primarily women's responsibility (MacKendrick 2018).

While precautionary consumption and inverted quarantine address health risks—the possibilities of harm, usually at some future point in time—how do people engage with chemicals that are actively impairing and damaging them? In environmental justice struggles, this work centers on community protection strategies and political organizing work. This takes a myriad of forms: distributing bottled water, working with scientists on community health surveys, protesting, and campaigning for community and cultural needs like the return of historical fire practices. These health struggles are often contested, with polluters and the state rejecting blame for cancer clusters or heightened asthma rates (i.e., Sze 2007; Jacobson 2016). Although contestation around environmental causes is at work in these cases, most of these conditions, like asthma, cancer, and the neural toxicity of lead poisoning, are not themselves medically contested like multiple chemical sensitivity is. Although deeply related to issues of environment, health, and the dispersal of chemicals in society, multiple chemical sensitivity has not been theorized as an environmental justice case because there is not clear evidence of environmental racism or classism in who is affected (Alaimo 2010). Multiple chemical sensitivity is an illness that proffers different forms of engagement with environmental contaminants than we see in many environmental justice cases or in personal protection strategies. These forms of engagement center around interactional strategies for managing chemical contaminants.

1.4. Relational Illness

Multiple chemical sensitivity is not only an environmental illness but also what Kroll-Smith and Floyd call a "relational illness", which they define as "the degree to which debilitating symptoms are believed to be caused in part by the personal habits and routines of people who live or work in the social circles occupied by sick people" (Kroll-Smith and Floyd 1997, p. xii). This way of seeing illness makes use of our sociological imaginations, revealing our choices, experiences, and social locations as interconnected. Important to the experience of relational illness is that other unafflicted people may be asked to make changes to their own behavior due to the impact it may have on other's health. This raises important questions of social responsibility, as in this formulation of illness, proximate others become "vectors of risk". What do we owe to one another's health? An analogous scenario can be found in DeSoucey and Waggoner's work on peanut allergies and airplanes, in which they analyzed public comments to a proposed ban on serving peanuts on planes. Here, we see that risk, like illness, can be relational. Their work calls for us to develop an ethic of empathy that they call "responsible sociality" when we are in communal or social

settings (DeSoucey and Waggoner 2022). Multiple chemical sensitivity reveals further how dire the need for this ethic is in social life.

People with multiple chemical sensitivity redefine what is hazardous in the world, pointing out how everyday spaces and other people's bodies can cause them physical harm. In this paper, I break this down into polluted spaces: contaminated bodies, and the feedback loop between the two. By redefining what is hazardous to their health, they make chemical exposures a social and relational issue and attempt to recruit other people into helping them manage these exposures. I call this redefinition "relational exposures", whereupon chemicals become seen as a form of contagion and others become vectors of risk. As the Environmental Health Association of Quebec explains, "This is probably one condition, where the daily management and the good state of health of the person with multiple chemical sensitivity, are strongly dependent on the choices and actions of people around them and also those that they encounter in their daily lives" (ASEQ-EHAQ 2024). This quote highlights the importance of both strangers and loved ones in the health of those with multiple chemical sensitivities.

I argue that because chemical exposures are relational, the chemically reactive cannot protect themselves through individual strategies alone. They need other people to acknowledge our chemical interconnectedness in order to protect their physical, emotional, and mental health as well as to maintain their relationships. In this paper, I ask the following questions: How does relational illness work in the case of multiple chemical sensitivity? What are the implications of transforming the meaning of chemicals in daily life into relational exposures? What are the interactional strategies for managing this kind of chemical contamination? In answering these questions, I tease apart how these chemicals enter people's lives and how this alters their experiences of the body, space, and relationships.

2. Materials and Methods

My work is an ethnographically embedded interview project consisting of 33 interviews, participant observation of an online support group, and content analysis of newsletters and websites created by people with multiple chemical sensitivity. Twenty-nine of my interviews were with multiple chemical sensitivity sufferers and four were with family and friends of sufferers. As multiple chemical sensitivity is a contested illness that often eludes diagnosis, my criteria for inclusion was that respondents self-identified as having multiple chemical sensitivity. While not everyone I spoke with had a formal diagnosis, they had all made substantial changes to their lives in order to avoid chemicals. As will become clear, concerns about my own potential for chemical contamination prevented a more immersive ethnography from taking place. Still, my learning was deeply informed by my physical presence amongst those who have multiple chemical sensitivity and how we navigated the chemicals on my body and belongings. Despite reading materials by multiple chemical sensitivity sufferers in preparation for my field work, many of these practices only became clear once I was in the community and visiting with people. Additionally, many strategies, practices, and support networks are underground.

I began this project by visiting a chemically sensitive community in the Southwest I call Juniper. Prior to this visit, I reached out to a member of the community, letting them know I wanted to interview people with multiple chemical sensitivity for my dissertation. They encouraged me to visit and helped put me in touch with other people living in Juniper. Many of these respondents then connected me with others living with multiple chemical sensitivity throughout the Southwest. The Southwest is a favored place for many with multiple chemical sensitivity to relocate. People with multiple chemical sensitivity often also react to mold and the terpenes in wood, and the dry desert ecosystem brings relief. As some people lose access to housing and must live out of their cars and vans, the Southwest provides areas that are warm enough to survive throughout the winter while maintaining a distance from polluted areas. People also come to the area with the hope of forming relationships with others with multiple chemical sensitivity based on shared experiences, tolerances, and proximity. I drove out in a small RV in September 2022 and spent almost a

month living near the community. I stayed at an RV park nearby so I could access a power hookup, but I regularly visited community members at their houses and even camped out in my van for two nights on someone's property. I conducted semi-structured interviews with 9 people who currently lived in or near Juniper and 1 former resident who lives elsewhere in the Southwest.

After this trip, I snowball sampled from my respondents while I began data transcription and coding. These interviews were conducted primarily over Zoom but occasionally over the phone. I was then put in touch with another group of sufferers, located in and around a midsize Southwestern city I call Desert City and was invited to attend a regional online support group over Zoom. While I initially planned to focus on multiple chemical sensitivity sufferers in the Southwest, because this support group now meets on Zoom due to COVID-19, people are tapping in for support from around the country. Therefore, some of my remote interviews took place with people not currently living in the Southwest, including three people in Canada. Though the Southwest remains an important symbolic and material place within the social world of multiple chemical sensitivity.

3. Results

The chemically reactive redefine what is hazardous about chemical exposures and pollution, suggesting they are not only a matter of individual choice (as employers of precautionary consumption suggest) or of corporate and government malfeasance (as in environmental justice cases) but rather that chemicals spread between bodies and spaces, making contamination an interactional issue that requires a response from others. I call this redefinition "relational exposures". Decision making that was thought to be deeply personal is revealed to have implications for others, through their bodies, health, emotions, and ability to sustain relationships and occupy certain spaces. As Joy shared with me, "This is not something that just bothers us a little. This can actually have incredibly detrimental effects on our bodies, our minds, our emotions, and it takes so much. One thirty second hit can take weeks to recover, depending upon what it was." Other people's choices around chemicals—mostly seen through their product usage—deeply impact those with multiple chemical sensitivity and result in contestations. These experiences transform the meaning around chemicals in everyday life into a social concept. What is personal does not become political, but it does become relational. Other people's bodies, clothes, homes, and yards become areas of contestation. This can be challenging for both those with multiple chemical sensitivity and those without the condition to navigate. As Kelly explains, "Most people, they don't get it. It's like, 'Your illness is affecting me. It's taking things away from me' right?" Although some people do find support and accommodation from family, friends, or health care providers, chemicals in social life remain an ever-present issue in interactions with new health care providers, neighbors, strangers, and often certain family members. Even those willing to accommodate them are often restricted in how far they can go. As Peter said in reference to his closest friends, "everything is to a limit". Chemical avoidance is the most employed strategy of mitigating and coping with multiple chemical sensitivity, requiring sufferers to build an inverted quarantine around themselves. However, multiple chemical sensitivity shows how other people and their relationships with chemicals break these quarantines. Both the physical spaces that surround those with multiple chemical sensitivity and the bodies of other people matter for understanding and navigating chemical exposures as relational.

3.1. Polluted Spaces

Through multiple chemical sensitivity, spaces normally thought to be safe from toxicity like yards, homes, office buildings, and doctor's offices become suffused with pollution. While sick building syndrome, a related condition to multiple chemical sensitivity, has implicated office buildings as causing chemical harms (Murphy 2006) and yards have become indicative of chemical dangers in environmental justice cases like Love Canal (Gibbs 2010), these spaces have not been widely problematized by the Environmental

Protection Agency or taken up by consumer action groups like the Environmental Working Group. In fact, the social interactions that my respondents show us that the general public does not see these spaces as risky or as a source of health problems. People with multiple chemical sensitivity are vulnerable in these spaces and therefore must find ways to maintain an inverted quarantine through chemical avoidance in these spaces. Neighbors in particular can be a problem for practicing chemical avoidance. Their choices about home and yard care might involve applying pesticides and paints, dispelling scented laundry products through dryer vents, or burning trash. In their work on peanut allergies and airplanes, DeSoucey and Waggoner evoke the concept of "responsible sociality", "an ethic of discernible empathy for proximate others and of consideration for public benefit in social and communal settings." (DeSoucey and Waggoner 2022, p. 50). A necessary condition for responsible sociality is the ability to trust these "proximate others", such as neighbors. While their work examines a communal setting, airplanes, the experiences of those with multiple chemical sensitivity shows how private spaces like yards also become places to practice (or reject) responsible sociality. Public and private space both matter to those with multiple chemical sensitivity, but what is public and what is private space when chemicals transgress these boundaries? This dynamic between neighbors elucidates how yards and homes can become sites of chemical contestation. As Myles explains to me:

> *It's really scary with multiple chemical sensitivity to confront neighbors because there's just so many stories of people who get resentful and then intentionally expose you to stuff. So, it's one of those things where we'd rather not bring it up. Yeah, there's been cases, I think I've heard of people, like dumping pesticides on your lawn and stuff like that, just because they think you're crazy. And they think that you're asking too personal things of them.*

Myles had told me that his neighbor was burning yard waste in his ditch and that this was a problem for him. Although he finds the area he relocated to (a coastal region of the United States) to be climatically favorable for his condition, the local "culture of fire smoke" presents a health problem for him. I asked if he had ever talked to his neighbor about the burns, which is when he shared the fear he has over these kinds of interactions with neighbors. This is not an uncommon feeling amongst people with multiple chemical sensitivity and is in part why people are drawn to living in Juniper, or other areas of the Southwest, although as I saw this did not totally eliminate these issues. Fear, as a result of vulnerability to other's use of chemicals, is one of the many emotional contours of multiple chemical sensitivity. Here too, Myles explains that certain asks are "too personal". In this case, what others do in their yards—a factor clearly related to the culture of private property in the United States. This is despite the fact that these decisions spread to others, in this case in the form of smoke, which Myles can get sick from and must attempt to manage. He and his roommate communicate when there is any kind of contamination in the area, like the smoke and close all the windows. In the past, she would have also run an air purifier, but he cannot tolerate those, so this is no longer an option. Multiple chemical sensitivity is unique to the individual and everyone has slightly different reactions and triggers, adding complexity to accommodations and shared space.

Pesticides are also a commonly cited issue with neighbors. Pesticides are a noted health problem for agricultural workers (Harrison 2011; Schwartz et al. 2015; Donley et al. 2022) and are culturally acknowledged and problematized through the two-tiered market of organic and conventional agriculture (Cairns et al. 2013; Obach 2015), but pesticides exist in other spaces as well. While pesticides on food from agricultural practices remain an issue, and one that drives many with multiple chemical sensitivity to buy organic, the chemically reactive also report that the use of insecticides and rodenticides within restaurants, grocery stores, and schools impacts their health. Likewise, there can be issues when neighbors use herbicides in landscaping. As Keith said about neighbors without multiple chemical sensitivity "You just never know, you get the people that love the herbicide". Although he has not had a problem with his current neighbors, there is more security and safety in

having neighbors who also have multiple chemical sensitivity. Keith and I discussed his experiences with prior neighbors in a different rural area:

> *The biggest issue I had with my neighbor. . .was when he started priming the exterior of his house with Kilz brand primer. Kilz is really toxic because it contains an added fungicide. I was working on my laptop in my house, unaware that he was even going to paint, when I felt really acutely sick from something. I looked out the window and saw him starting to paint. The next day I went over and saw that he had a 5-gallon bucket of Kilz that he was planning to continue using. It could well have made me homeless if he did that, given how sick I got from him painting a small area. So, feeling rather desperate I explained that the Kilz was making me sick, and said I would buy him a bottle of low-VOC (volatile organic compound) primer at my expense instead. He grumbled a little but agreed. So, I immediately ordered the safer primer from our local ACE Hardware and was able to pick it up two days later and deliver it to my neighbor. He used it and I never felt a thing from it, fortunately. That was a huge relief and bullet dodged.*

This marks an example of resolving a chemical contestation and shows what is possible when other people are willing to exercise responsible sociality (DeSoucey and Waggoner 2022) towards others. In this case, Keith is able to stay in his home and to avoid any health effects from his neighbor's painting. He further explained:

> *I'm well aware that people are more likely to help you when needed if they like you. So, I think I benefitted in this case from making an effort from the time I moved in to get to know my neighbor and find common ground with him. And I had told him about my chemical sensitivities, so he was already aware of that. It helped that he was a good guy whom I genuinely liked. And I think because we already had a good neighborly relationship, he was willing to help me out when I needed it.*

The emotional labor Keith took on to have a good relationship with his neighbor made it possible for him to trust that his neighbor would take his concerns seriously. Paying for the low-VOC primer himself also helped resolve this issue but is not an expense everyone with this disabling condition can afford.

Similar chemical challenges are also present with neighbors who are further away. Many respondents explained to me the issues they have walking through their neighborhoods, such as encountering pesticides, cars with their doors open and air fresheners inside, people wearing scented products, and laundry exhaust coming from dryer vents. This is especially frustrating, as many people with multiple chemical sensitivity are homebound. They struggle to be in public spaces like workplaces, libraries, and stores and they often cannot tolerate the private spaces their friends and family live in. Walking is an easy way to leave the house and provides exercise that some people feel helps manage their condition, but outside environments are not always safe either. As Peter told me, "I stay away from anything outside". Isaac explains, "Living in [a big city] in a dense neighborhood was hard, you go walking, and you get hit by scented dryer sheets, which is probably universally the worst for all of us. And you'd, you'd have to hold your nose and kind of put your hand over your face and run back inside and stop breathing". Isaac references how the exposures from laundry products, particularly dryer sheets, spread through the air and become environmental, and therefore an issue for his health. Residential dryer expellant is a contributor to air pollution, with over 25 volatile organic compounds identified in emissions from fragrant detergents and dryer sheets, most of which are unidentified on product labels (Steinemann et al. 2013). This knowledge is therefore not visible to consumers, even those who want to avoid chemicals, nor is it easy to grasp how this product could be impacting others or the environment, even though it is. Not only is technical information missing from products, but unlike secondhand smoke, laundry expellant has not been culturally problematized into a relational exposure. People do not have a framework of reference for how their choice of detergent could possibly impact other people. However, Isaac recognized and felt these choices right away in his body and took immediate action to

prevent himself from breathing in expellant, physically covering his mouth and retreating back into his home.

Interior spaces, homes, and domestic maintenance routines also become an issue when living with other people, whether they are family, roommates, or other multiple chemical sensitivity sufferers. Melissa moved in with her parents due to her health and she explained to me a significant conflict they had, which occurred around their house.

> *Melissa: For example, they wanted to stain the house this summer. Like, that is going to mess me up for a long time. And trying to find a product that wasn't like three times as expensive that I could also tolerate that would also meet what they were looking for was a challenge. And we had a lot of fights about it.*
>
> *Interviewer: Okay. Did you find something?*
>
> *Melissa: Yeah, I'm not sure how well it worked but we did eventually find something*
>
> *Interviewer: Like how well it worked on the outside of—on the house?*
>
> *Melissa: I think some of that had to do with a person applying it, he didn't really follow the directions, it was gonna require some extra effort on his part to do it correctly and he just did it his way. So, it didn't turn out quite as well as I think it could have.*
>
> *Interviewer: That's frustrating. And did you feel like you were impacted by the product? Or did you leave for a while? How did you deal with that?*
>
> *Melissa: Yeah, I went camping for a week. And when I came back to the house, I had to have the house closed up for a little while after that, it did eventually dissipate*

When homes become unsafe, people become unhoused, living out of their cars or vans, couch surfing with friends, or moving in with family. Keith alluded to this in the paint story with his neighbor. Alice also raised the specter of homelessness with me as she told me how her landlord wanted to put in a fence that she felt would be harmful to her health. She said this action is contestable through the Americans with Disabilities Act and housing laws promising the right to quiet enjoyment of property but would require legally challenging her landlord. Housing is the number one social and political issue that respondents raised, beyond even chemical regulations or bans. Housing and the search for a safe space is a driver in most moves out to the Southwest. For people living out of their vehicles, the hospitable climate and large swaths of available public lands under the Bureau of Land Management make surviving and avoiding chemicals seem possible, whether or not that is actually the case.

Additionally, some of my respondents see massage therapists, acupuncturists, dentists, and doctors and they have to navigate whether the benefits of medical or therapeutic services outweigh costs from the exposures they will have in those spaces, even if providers are willing to use unscented detergents on sheets and clothing and refrain from cleaning before their appointments. Relational exposures from chemicals plague these public spaces. As Gibson writes in her work on community access, "Because this population is excluded from sight, business goes on as usual, and public venues remain the purview of those whose bodies conform to the modern-day mandate of imperviousness to toxics" (Gibson 2010, p. 11). While the bodies of the non-chemically reactive are not actually impervious to chemicals, they are able to experience these spaces as unpolluted because of their own lack of an embodied response to these exposures.

3.2. Contaminated Bodies

Multiple chemical sensitivity is not just an issue of physical spaces but also of the body. Other people's bodies are potentially dangerous for those with multiple chemical sensitivity to be close to. If we think of our bodies as constituted by our physical forms as well as our clothes, hair, shoes, and the products we apply onto our bodies, clothes, hair, and shoes, then we can see how we come into contact with chemicals, which becomes a subject of conflict, contestation, and accommodation. This creates challenges with both close ties and with strangers. In this way, people with multiple chemical sensitivity redefine other people

as contaminated, which is not something seen in other cases of chemical exposures and health. As Myles said:

> *Yeah, it's so obnoxious at a certain point. . .I've gotten to the point where these smells, you know, because I don't have laundry smells or anything in my house, I am not habituated to them. And so, yeah, you'll be walking behind, a group of women or something. And then you'll smell it, but also taste it a little bit. I guess, it just feels like they're just constantly polluting the air. And it's like, this is so unnecessary. And it makes my life so much worse. Like, please.*

Myles refers to the chemicals he perceives on people he is walking near, suggesting these could be the result of laundry products but possibly other things as well like perfume, lotions, or sunscreens. Not only can he smell these, but he can also taste them, suggesting a more refined sensory experience of chemicals than most people (like these hypothetical women) are having. He also transforms something that is commonly thought of as a personal and private choice into a relational exposure. Laundry detergent and other scented products may be problematized by mothers and organizations like the Environmental Working Group as posing risks to the consumer who is putting them on their clothes or bodies, but they are not widely seen as inflicting relational harm, as being captured and implicated in our interactions with other people.

The implications of other people as contaminated mean that people's social lives erode because others are no longer safe to be around. This is a partial reason why multiple chemical sensitivity often tests, limits, and ends relationships, though disbelief, denialism, and the frequent relegation of people with multiple chemical sensitivity as "crazy" is another piece of this story. While relationships are impacted in other cases of disability and chronic illness (Shriver and Waskul 2006), multiple chemical sensitivity is particularly challenging because it is a relational illness that requires proximate others to change aspects of their own lifestyles and relationships with chemicals. Proximate others have to undergo accommodation processes not only in their spaces, as previously discussed, but also to their bodies. In a discussion with Barry about what I was doing to manage my own contamination my body became implicated as a source of exposure. Barry said to me:

> *Even you- just traveling in -your being in a car on the road, with car fumes and stuff. You would be breathing out car exhaust. It's very noticeable to someone with multiple chemical sensitivity for a couple days, two or three days. I mean, it takes that long for your body to get rid of all that. But you didn't know, you know, people that- when you live in the soup you don't notice.*

Barry is telling me I am ignorant of the extent of chemical exposures but also letting me off the hook for this by saying I would not notice because I live "in the soup". This evokes a vivid image of swimming in a bowl of chemicals and suggests that the world is so thoroughly flooded with chemicals that we can no longer use our senses to notice when they are present. It is true that the longer I spent in Juniper, the more aware I became of how places smelled, especially scents I assumed were related to chemicals. At one point, I picked up some consent forms at a print shop. As soon as I arrived, I noticed a strong smell reminiscent of new carpeting wafting out the open doorway. Although I had my hair tied back, I immediately became concerned I might pick up the smell on my hair or clothes. I hovered outside the door waiting for a worker to be free to help me before running briefly inside in order to avoid this transfer process that I had been cautioned about.

In the above excerpt, Barry is also saying that these chemicals, like those in car exhaust, are being absorbed into my body and then expelled through my breath, in a way that is perceptible and potentially even harmful to someone with multiple chemical sensitivity. If I stopped doing certain things, like driving, my body would quickly get rid of these chemicals, and I would no longer be problematic in this space. However, to fully rid myself of these chemicals would basically require a withdrawal from the "healthy world", as one respondent called it. Most people with multiple chemical sensitivity do not expect that of those without the condition. Instead, they create their own routines and practices to

manage these chemical transgressions, like decontaminating surfaces after people visit and keeping separate indoor and outdoor clothing sets. Some people offer visitors safe clothes and products to use. During my time in the field interviewing people, we almost always sat outside, and I would be told to sit in a chair downwind of the person with multiple chemical sensitivity. The work of this kind of chemical management is intensive and merits its own separate consideration. It is the bulk of the illness work (Corbin and Strauss 1985) of multiple chemical sensitivity, adds vastly to domestic labor, and entails strategic emotional labor to access accommodations and maintain relationships. There is an ever-present tension between recruiting other people into chemical avoidance practices, like getting them to switch to unscented products, and recognizing that people without multiple chemical sensitivity will always remain somewhat contaminated while trying to nevertheless maintain relationships across the lines of relational exposures.

3.3. Chemical Contagions: The Movement between Bodies and Spaces

Persistent chemical exposures make navigating public spaces difficult but letting someone else into a chemically safe space can also be risky because they may contaminate the space with something they have on their body or clothes. Peter explained to me how contaminated bodies can pollute spaces:

> *Everything is to a limit. You know, my two closest friends, Richard and Louise, they were married. . . And I can see both of them a little bit. But not a lot. Richard has a thing. He loves Old Spice. His grandfather was an Old Spice guy. He's an Old Spice guy. He'll do me a favor and he won't bathe when he visits, but you know, just the residue. Sometimes I can tolerate him, for a few hours, other times not. Sometimes we'll go out to a restaurant that's not too bad because when food smells are in the air, it actually helps. Louise has got something going on with her hair. I don't know if it's a shampoo or color. Well, I don't think she colors her hair. I think it's shampoo or I don't know. But shampoos are really bad for me. So, I'll just go to her house because she's afraid to contaminate my furniture and it's like that kind of stuff. Somebody comes in, sits on my couch. It's kind of a hair-raising thing...*

Peter is worried about his ability to tolerate the contamination on his friends' bodies and of this contamination spreading within his home. Whenever someone does come into his home, he has a multi-step decontamination procedure he employs to rid his furniture of any chemical transfers. If he does not do this, he will eventually feel the impacts in his body from the chemicals that have been brought into his space. For him, multiple chemical sensitivity primarily presents as breathing problems and brain fog. In an interview with Myles, he detailed how he prevents the spread of chemicals that his body may have acquired while out in the world:

> *For drugstores, I'm okay in a drugstore long enough to go and pick up my medications. But because my roommate insists that if I ever go inside, like if I leave the house and go inside somewhere else, I have to bring my outdoor clothes and then I come in and I have to change at the very least if not shower too. And so sometimes to simplify that I'll just do outside pickup of my medications.*

This quote shows claims being made about how chemicals can be picked up on clothes and bodies through simply being in the world, inside other public or private places. This articulates a relationship between the body, space, and chemicals wherein the body is vulnerable to chemicals existing in public and private spaces but also can become a conduit that moves chemicals from one place to another.

This way of thinking about chemicals conceives of a feedback loop between bodies and spaces. The body can bring personal care products or the fragrances and chemicals picked up in the world (like the car exhaust Barry told me was on my breath) into public space or into someone else's home. Conversely, being in public space can cause chemicals to enter the body, not just through completely unintentional and unobserved exposures like car exhaust but also in the ways norms of public space are often organized around

chemical- and fragrance-heavy products. We have all encountered some version of this, like in gas station restrooms, where the only hand soap available is that scented pink formula, or in yoga classes that burn incense or require the use of Lysol wipes to clean shared props. Although we may know or worry that these chemical exposures are a health risk to us, it is doubtful we imagine that these exposures exist within our social interactions. In other words, we probably do not see ourselves as "vectors of risk" (DeSoucey and Waggoner 2022). Prior work demonstrates that non-chemically reactive people are likely to draw a symbolic boundary around these exposures, keeping themselves from socially problematizing them, even if they regularly practice precautionary consumption (Altman et al. 2008; MacKendrick and Stevens 2016). Those with multiple chemical sensitivity ask us to consider the chemical exchange taking place between bodies and public and private spaces. While the powerful concept of "toxic trespass" (Malkan 2003; Brown et al. 2020) uses human chemical body burdens to trouble the chemicals coming into our bodies through our environments and consumer products, it does not articulate a relationship between bodies themselves or frame bodies as contaminating physical spaces. However, this is a well-stated problem for those with multiple chemical sensitivity. As Whitney told me:

> *Nope, nobody comes into my home unless they're toxin free. And living a toxic free life. You know, that's my children all live that way. And also, they do detoxes before they come. Because one person in your home for a short time can totally contaminate your home. And you can react for months afterwards.*

This idea was echoed in many of my interviews and in the experiences I had in the field, where I was often invited to glance inside someone's home to see the accommodations they had made for chemical exposures but was very rarely invited in. Whitney's children were willing to change their own lifestyles for her, as she said, "my children all live that way", but they still had to take extra precautions before visiting her. She told me when her children come to visit:

> *I ask them not to stop anywhere else before they come here because transference can happen from say if you stopped into a coffee shop or whatever. Which actually, the second example actually happened. My daughter was out, and she was coming here. She stopped into a coffee shop, and they happened to be mopping the floor. Toxic scented crap. And she came in here and it stopped my breathing. So yeah, not good.*

We can see in this excerpt how her children have to adjust their own understandings of where chemicals can be in the world and be mindful of this chemical transfer process. Although they do not permanently change their behaviors, they are willing to temporarily do so to maintain their relationship with someone with MCS.

4. Discussion

By claiming new ways in which chemicals are implicated in physical spaces and on other people's bodies, those with multiple chemical sensitivity transform chemicals into a social health issue. Prior work on chemicals, health, and environmental toxins rarely finds chemicals as relational objects within social interactions with others. Though chemicals are approached frequently as an environmental problem, those with multiple chemical sensitivity claim them as a social problem in which other people's personal actions bring chemicals into their lives, rather than just the activities of industrial polluters or existing omnipresent pollution (though this presents health challenges for them as well). Thus, those with multiple chemical sensitivity reject the cultural mandate that health is a matter of total personal responsibility (Gibson 1997). Whereas some illnesses, like breast cancer, undergo causal contestation that attempts to reframe them as environmental in origin rather than related to genetics or lifestyle (McCormick et al. 2003; Klawiter 2004; Brown 2007), multiple chemical sensitivity is not only claiming to be an environmental illness but a relational illness (Kroll-Smith and Floyd 1997). This further demonstrates the limitations

of personal protection strategies in managing ubiquitous chemical exposures as we are all connected in social and physical relation to one another.

This transformation of a health issue into a social issue can be seen in two analogous cases: secondhand smoke and COVID-19. Secondhand smoke seems to be the only existing case in which a personal chemical behavior was culturally transformed into a public health issue and massively curtailed, through public health campaigns, government regulations, and increased social stigma towards smokers. This was fundamentally premised on the idea that the chemicals in cigarettes, cigars, tobacco, and their related smoke are relational exposures, toxic not only for smokers but for proximate others. While we have scientific evidence that other personal choices, like laundry products, contribute to air pollution as well, it is only people with multiple chemical sensitivity who are widely problematizing this as a public health issue. The COVID-19 pandemic is another salient example of individuals' bodies being transformed into more socially recognized beings. For many in the United States and other Western nations where masking during illness was not a widespread cultural practice, the implementation of masks transformed the breath into a social concept, with implications for other's health. Sickness was suddenly "seen" to spread interactionally, in ways that the public had not previously acknowledged, nor developed standard practices around. Though scientists and doctors have long known that breath spreads disease, this knowledge was not robustly implemented in social life before COVID-19. While this implementation quickly devolved as a result of right-wing conspiracies, denialism, ableism, and anti-Asian racism, COVID-19 is still a remarkable historical moment for relational illness.

Multiple chemical sensitivity is a life-transforming experience that prohibits many interactions with material culture and other people. Though people with multiple chemical sensitivity are burdened with many traditionally environmental facets of this condition, like needing to buy organic food or coping with air pollution, the social pieces of this create deep emotional experiences around accommodations, sustaining relationships, and existing in public and private space. Through claiming that chemicals can spread interactionally, and contamination can move between bodies and spaces, those with multiple chemical sensitivity assert that chemicals are more deeply entrenched in our lives than the public realizes.

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