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Dumping in the Global Dixie: Circle of Poison and the Contamination of the Global South

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The 1981 publication of David Weir and Mark Shapiro’s exposé *Circle of Poison* almost ten years after the banning of DDT represented how the landscape of understandings about hazardous chemicals and their regulation had changed. The book exposed two things. One was the ways power had reconfigured itself, which in turn highlighted the ways the story *Silent Spring* told, which effectively moved hearts and minds to make change happen. One thing that remained hidden, however, to both Rachel Carson and Weir and Shapiro, was the degree to which the chemical industry traded at the local and regional level, conducting international trade, emulating the poor and often bad faith practices of the transnational corporations. The failure of *Circle*’s narrative, coupled with an overlooked and extensive network of mom-and-pop chemical companies, failed to build on *Silent Spring*’s legacy.

**keywords:** chemicals, *Circle of Poison*, transglobal corporations, local industry, narrative.

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Responding to the 1962 publication of *Silent Spring*, the Monsanto Chemical Company countered with a satiric story, ‘The Desolate Year’, which it published as a pamphlet and distributed over five thousand copies. The parody described the bleak, desolate world where insects overwhelmed fields and crops if pesticides were not used for one year.¹ Almost two decades later, Dow Chemical circulated an excerpt from H. Peter Metzger’s 1978 book, *The Coercive Utopians: Their Hidden Agenda*, in their company newsletter. In it, Metzger warned of the environmental movement’s takeover of the political establishment, a takeover that would have profound consequences for capitalism itself. In the almost two decades between *Silent Spring* and the new chemical disaster of Love Canal, the chemical industry perceived itself as under attack, with new laws, regulatory entities and groups opposed to (chemical) business as usual.

The 1981 publication of *Circle of Poison* exposed the ways US chemical companies had responded to this new reality of scrutiny and regulation. Published almost twenty years after *Silent Spring* and almost ten years after the banning of DDT in 1972, the book provided a snapshot of US regulatory policy and the business practices of the chemical industry. US (and foreign) chemical manufacturers had continued to make hazardous products. They simply began exporting banned chemicals – products that the Environmental Protection Agency (EPA) had either judged hazardous, or ones that had never even been evaluated by the regulatory agency – to markets overseas. Just as many companies had dumped their hazardous wastes in the American South, as chronicled by sociologist Robert Bullard’s classic work, *Dumping in Dixie* (1990), corporations like DuPont, Dow, Monsanto and Shell capitalised on their international presence and intensified their existing and the development of new, foreign subsidiaries and markets. They proceeded to dump their hazardous products in the Global South.

This paper examines the issues raised in a *Circle of Poison*, the book’s call to action and the global exportation of hazardous chemicals. It argues that an examination of *Circle of Poison* offers a snapshot of chemical regulatory policy and practices almost two decades after the publication of Rachel Carson’s *Silent Spring*, that the book’s narrative failed to raise consciousness or arouse action, and how activists and regulators underestimated the entrenched nature of transnational sales of hazardous chemicals which severely limited efforts to reduce and ban toxic products. The first section of the essay provides a summary of the context in which the book was published. Next, the paper focuses on the issues raised in the book and its call to action. The next two sections consider the book’s narrative failure and a case study of a regional chemical manufacturing company’s international sales network. The concluding section suggests what needs to happen now to decrease the presence of hazardous chemicals globally.

The banning of DDT in 1972 represented one single environmental victory credited to *Silent Spring*. The extended nature of banning DDT demonstrates the power of not only chemical manu-
facturers, but their allies in the forestry and agricultural industries. But technological advances, like the development of gas chromatography, bolstered arguments concerning the buildup of hazardous chemical residues. President Richard M. Nixon’s concern regarding the political potency of environmentalism also changed the regulatory landscape. The creation of the Environmental Protection Agency (EPA) in 1970 reassigned the oversight of chemical substances from the Department of Agriculture to the EPA. The new agency was charged with enforcement of laws – like the Clean Air (1970) and Clean Water (1972) Acts – setting new environmental pollution standards. *Silent Spring* publicised growing concerns over chemical spraying programmes for gypsy moths and fire ants that took place throughout the US. The first place in the US to ban DDT spraying was in Suffolk County Long Island, also the birthplace of the Environmental Defense Fund (EDF), a group which united scientists and citizens. The EDF expanded the campaigns to places like Michigan, Wisconsin and Washington D.C. This initial momentum stalled, however, as chemical manufacturers shifted the export and manufacturing of the most toxic chemicals overseas. Investigative reporters focused on these practices in their exposures of environmental wrongdoing.²

Written by David Weir and Mark Shapiro, *Circle of Poison (CoP)* began as a series of magazine articles published in the Pacific News Service and *Mother Jones*, with support from the Center for Investigative Journalism and Institute for Food and Development Policy.³


³ ‘Nonfiction in Brief’, *New York Times Book Review*, 19 April 1981. The articles published in *Rolling Stone* in 1977 and *Mother Jones* in 1979 both ‘won’ National Magazine Awards for ‘Best Censored’ stories, given to stories judged to be ‘the most important stories ignored or underplayed by the press’. This raises an
Nine brief chapters explored the major issues identified by CoP. The book begins by baldly stating the problem: ‘Dozens of pesticides too dangerous for unrestricted use in the United States are shipped to underdeveloped countries. There, lack of regulation, illiteracy and repressive working conditions can turn even a “safe” pesticide into a deadly weapon.’ The World Health Organization (WHO) estimated a heavy burden for the destination countries, where one person died every minute. But as the authors noted, ‘But we are victims too. Pesticide exports create a circle of poison, disabling workers in American chemical plants and later returning to us in the food we import’.

The United States served as both the starting point (chemical workers) and ending point (consumers) in the circle of hazardous chemicals manufactured and exported and then reimported as residues on food and goods. The fact that such practices were legal under US law appeared inexplicable, but the US$7 billion generated by a cluster of chemical companies explained the barriers to implementing real bans on toxic chemicals. Countries receiving the banned or untested/regulated chemicals were located throughout the Global South, such as Costa Rica, Ecuador, the Philippines, Indonesia, India and with an expansion into African countries projected over the next four years. Along with the absence of a regulatory infrastructure in many developing nations, CoP raised concerns about farmworkers, arguing that products were often unlabeled and used by workforces even more exploited than their American counterparts, due in part to illiteracy and extreme poverty.

One of the most compelling elements of the book’s beginning were the epigraphs from various actors: a Columbian farmer, an interesting point regarding the success of Silent Spring and the relative obscurity of multiple exposes published after it. It suggests that Rachel Carson’s successful Sea Trilogy may have played a significant role in establishing her as an exemplary nature writer and public scientist.

5 Ibid., p. 3.
6 Ibid., pp. 4–5.
dustry executive, a United Nations (UN) agency worker and a statement from the Food and Drug Administration (FDA). They capture the frustration, the anger, the elation and the consternation various parties felt. The stark contrast between the growing delight of the chemical company representative acknowledging that overseas sales of toxic chemicals had saved their company versus the Latin American farmer’s distress about the poisoning of his fields, his stock, his children. As Alfonso Castro lamented: ‘Could it be that even the gift that God gives – children – we cannot have?’ Later chapters focused on dumping practices, the hunger narrative, the complicity of the Global North and who controlled global food conditions.

To illustrate how banned chemicals were exported, CoP examined the case of dibromochloropropane (DBCP), an agent used against nematodes like roundworms that plagued tropical fruit crops like bananas and pineapples. The same chemical was discovered in 1979 to cause male infertility in workers manufacturing the pesticide. The starting point in DBCP’s ‘circle of poison’ pathway began in the city of Los Angeles. Here, workers loaded barrels of DBCP at an Amvac plant. From here the chemical travelled by semi-truck to Gulfport, Mississippi, and was loaded from the Stanford Fruit and Steamship Company docks onto a ‘banana boat’ and shipped to Costa Rica, or Honduras, or Ecuador. Once off-loaded, the pesticide went to Castle and Cooke (C&C) banana and pineapple plantations to be applied by workers. The crops were harvested and exported to the United States, where they appeared in breakfast dishes, desserts and as snacks. One quandary appeared to be that C&C said it had stopped buying DBCP from Amvac after the sterility issue was exposed, but Amvac’s production numbers had remained the same and the company continued to sell the pesti-

7 Alfonso Castro, quoted in Weir and Shapiro, Circle, p. 1.
cide in regions producing tropical fruits. The circle of poison was complete.

CoP may be one of the first works to challenge the standard industry myth that pesticides provided vital support in producing food to feed the hungry. This narrative appeared almost immediately after the publication of Silent Spring as demonstrated by the Monsanto parody that the company widely distributed that opens this paper. Along with industry and public health arguments claiming that DDT offered the only way to eradicate mosquitoes and thus malaria, the need for chemical pesticides to grow sufficient crops to address world hunger justified the exposure to hazardous chemicals. As one Velsicol Chemical Company executive noted, ‘We see nothing wrong with helping the hungry of the world eat’. The problem, however, as identified in CoP, could be seen when hunger and crop export data was analysed. Weir and Shapiro challenged this accepted wisdom.

But in the course of our investigation, we came to a startling conclusion: over half, and in some countries up to 70 percent, of the pesticides used in underdeveloped countries are applied to crops destined for export to consumers in Europe, Japan, and the United States. The poor and the hungry may labor in the fields, exposed daily to pesticide poisoning, but they do not get to eat many of the crops protected by pesticides.

Central American crops of cocoa, coffee and cotton – a non-food crop – were exported and not used to address the region’s severe food insufficiency problems. Cotton spraying consumed most of the pesticides used. Hunger remained a problem even when local landowners only sold a portion of their crops. Ranchers in El Salvador fed their cattle food processed from cotton production, with half of the resulting beef exported to Europe and the US. The remaining supplies were consumed by the wealthy and middle class, not the country’s

9 Weir and Shapiro, Circle, pp. 18–22.
10 Ibid., p. 32.
11 Ibid.
12 Weir and Shapiro, Circle, pp. 35–38.
hungry. Profits from exported crops did not benefit workers or the hungry either, ‘foreign exchange earned by agricultural exports [did] not return to improve the lives of the workers through better wages, housing, medical care, or schools’. The beneficiaries of foreign exchange were typically wealthy, urban elites who purchased consumer goods, frequented tourist facilities and invested in metropolitan industrialisation.

The Green Revolution, which centered on technology transfers to modernise agricultural practices in the Global South, played a significant role in increasing agricultural chemical dependence. Contemporary studies have criticised the Green Revolution for the environmental price paid as increasing food crop production, but which also saw increased pollution, deforestation and negative effects on the climate. Increased use of pesticides became necessary to sustain more productive seed varieties that were also more vulnerable, one of the outcomes of the Green Revolution touted as an answer to world hunger. Producing more food did address world hunger but did not completely resolve it, while rural poverty significantly increased. Green Revolution agricultural and financial policies and practices intensified the disparity between wealthy and poor, including the health disparity of chemical contamination, borne by exploited workers and the poor.

In critiquing the chemical industry’s influence on world agricultural policies, CoP makes an invaluable point. Why should so few determine agricultural policies that affected so many? One prob-

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13 Ibid., p. 33.

lem was industry’s success in infiltrating governance infrastructures, which included economic aid, non-governmental advisory bodies and regulatory policies and practices. In the case of dumping hazardous products, the chemical industry made itself an essential component of the 1960s Green Revolution, which sought to alleviate hunger through increasing agricultural food crop yields, producing more food through industrial agricultural practices. Some scholars have suggested that more research be devoted to the technologies adjacent to the development of new seeds – ‘transformations in water, land, pesticides, and chemical fertilizers’.\(^{15}\) With the contemporary focus on producing new, more abundant, seed stock, the seeds created were also more vulnerable to insect infestations. Which meant that while they did increase harvest outputs, the new seed stocks were more dependent on chemical fertilisers and pesticides. Economic development promoted modernising agricultural practices, which was achieved by financing ‘modern’ agricultural resources like irrigation, improved seeds and the use of hazardous chemicals (justified by the need to produce more food). Led by the World Bank, agricultural aid demanded that farmers in the Global South change their agricultural practices. As noted in CoP, ‘The [World] Bank staff does not include a single pest control expert to advise on pesticide use in its agricultural projects’.\(^{16}\) The World Bank instead allocated an amount of money earmarked for ‘chemicals’ to the country’s government to then be dispersed to farmers. The loose oversight of what kinds of chemicals were purchased, never mind that they were required in the first place, provided a profitable market for banned chemicals to be used in realising the Green Revolution.\(^{17}\)

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\(^{16}\) Weir and Shapiro, Circle, p. 50.

The US Agency for International Development (AID) followed a similar policy. Until 1975, when a lawsuit brought by environmental activists stopped the practice, AID had funded the use of banned chemicals as a part of their agricultural improvement projects. AID, along with the Export-Import Bank and the Overseas Private Investment Corporation (OPIC), supported US chemical companies exporting goods and limited said companies’ financial risk. To add insult to injury, the bulk of OPIC financing did not help ordinary farmers modernise, but the money went instead ‘to a small number of huge corporations operating in a handful of third world countries with authoritarian regimes’. Even more egregious, three chemical companies were in the top five entities receiving the most OPIC funding.

The chemical industry succeeded in influencing UN agencies devoted to addressing world hunger, such as the UN’s Food and Agriculture Organization (FAO), as well. The FAO intended to provide independent expertise in the technology transfers happening as a part of the Green Revolution, with pesticides as one area of advice. Instead of empowering local farmers to choose systems that would work best for them, the FAO advanced industry interests by serving ‘as a critical link between underdeveloped nations and multinational agribusiness firms’. In 1966 the FAO formalised this arrangement when the Industry Cooperative Program (ICP) achieved official status and a secretariat. The Pesticide Working Group – composed of chemical industry firms like Bayer, BASF, Ciba-Geigy, American Cyanamid, Shell and others – was an important part of the ICP. The chemical industry infrastructure of the ICP meant that industry played a significant role in pest control planning. Chemical companies were empowered to advise countries on their pest control

*History* 87 (2) (2013): 201–23. https://doi.org/10.3098/ah.2013.87.2.201, for a discussion of India’s efforts to modernise its agriculture system prior to the Green Revolution and without importing biological and chemical resources; Weir and Shapiro, *Circle*, p. 50.

18 Weir and Shapiro, *Circle*, p. 51. Six countries received over half of the OPIC insurance financing: Brazil, the Philippines, South Korea, Indonesia, Taiwan and the Dominican Republic.

19 Weir and Shapiro, *Circle*, p. 52.
programs, such as when Hoechst consulted the Tanzanian government on a range of chemical products and equipment. Hoechst’s influence led to a supervisor being fired for improper supervision. These relationships often veered into outright corruption, such as when a malaria-eradication program in Bangladesh had a UN field official who worked for the European chemical firm providing the malathion used in the project.  

The chemical industry made their position on pesticide use clear in a 1974 working paper. In it the industry called for the creation of a world stockpile of ‘essential pesticides’ and which the chemical industry volunteered to provide training to world governments in the use of the chemicals. The development and approval of new pesticides should be fast tracked as well. Chemical companies’ privileged status within the FAO attracted strong criticism by the mid-1970s which led to the ICP being ejected from the FAO in 1978. The ICP simply transformed into the Industry Council for Development and expanded its influence on the FAO and other UN agricultural programs. One critic, working for the FAO, exposed the real willingness to help countries ‘modernise’ their agricultural practices: ‘They [ICD] are interested in technology transfer … They put out a lot of fancy materials – it’s meant to make you buy chemicals’.  

The concluding chapters of CoP discuss the problems experienced by the EPA, the US regulatory agency charged with oversight of chemical pesticides, and how to break the circle of poison. Weir and Shapiro portray the EPA as overwhelmed by the sheer volume of chemicals – over one thousand chemicals appeared every year – and ineffective. They gave an example of how the agency notified foreign governments as evidence of the agency’s failure. The EPA was hindered in great part because of the political influence wielded by the chemical industry. Funding waxed and waned dependent on the political climate of the moment, a climate often subject to intensive lobbying by various interest groups. Much of the system relied on voluntary participation by industry. Even if the EPA could iden-

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20 Ibid., pp. 51–53.

21 Ibid., pp. 52–54.
tify hazardous substances, the way it notified importing nations left much to be desired. Notifications went to the entity importing the chemicals, often subsidiaries of US and European chemical companies, which had no reason to share safety concerns. Shipping the chemicals through intermediary countries, like Switzerland, meant that notifications were sent there and never made it to the country where the chemicals were used. And even this system was vulnerable to politics. US diplomatic concerns about the effect of exporting toxic chemicals on America’s international reputation did not seem to be enough to tighten the regulation of such practices.\(^{22}\)

How could this vicious cycle be stopped? CoP advised readers to apply political pressure by writing letters, writing editorials and making presentations at local schools. Appendix A gave the addresses of various politicians, international organisations and the chemical companies themselves. Contact information for activist groups was also included, such as the Natural Resources Defense Council, the EDF and the United Nations Environmental Unit. Another group of potential contacts were groups fighting in the developing nations of Malaysia, the Philippines and Kenya. CoP empowered citizens to take such actions equipped with information. Appendices B and C identified the international corporations exporting/importing pesticides in 1978 to Costa Rica and Columbia. Tables one through five identified the various companies selling and buying banned chemicals, pesticides used on foodstuffs imported into the US and a list of US companies acquiring seed stocks. Almost fifteen per cent of the book was devoted to these informational resources. Based as it was on magazine articles, the book fell more into the arena of investigative journalism, exemplified by the Watergate expose, than it did to works more directly influenced by Rachel Carson’s Silent Spring.\(^{23}\)

Like Silent Spring, though, CoP rightly questioned who and how chemical regulatory policy was being set, both in the US and inter-

\(^{22}\) Ibid., pp. 57–60. The authors note that even as the book was going to press, the Ronald Reagan administration was seeking to dismantle the regulatory state, in particular those agencies overseeing environmental polluters.

\(^{23}\) Ibid., pp. 65–87, 97–104.
nationally. The next part of my discussion focuses on events prior to the 1981 publication of *CoP*. While *CoP* clearly identified US and European chemical companies as those poisoning the food, land and bodies of the people living in the Global South, its journalistic focus on the present moment may have underestimated other reasons for the circle of poison. Using a South Texas border case study provides some historical context for the business practices examined in *CoP* and may help better explain the entrenched nature of such activities and their resistance to reform.24

The southernmost region in Texas, the Lower Rio Grande Valley, was named for the Rio Grande River floodplain and mouth. The region shares over one thousand miles of border with Mexico. Anglo control of the valley occurred during the Texas Revolution of 1835–1836, the Mexican-American War, the Civil War and the Bandit Wars all led to a military buildup in the territory by the early-twentieth century. Technological modernisation in the form of a railroad and water irrigation systems helped develop the area’s agricultural resources. The Hayes-Sammons Chemical Company had its origins in a hardware store established in 1907 in the Rio Grande Valley to sell supplies to the local railroad and irrigation work crews. Later the company offered goods and services to the valley’s citrus industry, and by 1933 was advertising ‘Real Pest Control’ that included Volck and Orthol emulsions or a tank mix made in part with blood albumin emulsifier. The pesticides were specially formulated for Texas citrus and the advertisement suggested an endorsement from Professor F.T. Bingham, Edinburgh College, although his exact expertise was not specified. Another advertisement proclaimed that ‘10,000 Citrus Growers Can’t Be Wrong!’ The store claimed to have sold seventy thousand gallons of Orthol Tank Mix in just the last three weeks (which gives some sense of the market for pesticides used in the specialty crop market). In the 1930s and 40s, the store sold pesticides along with refrigerators and fishing gear, part of

its general inventory. The store did, however, also begin producing its own company-made pesticides for sale. As the advertisement for Mission Brand Pesticide proclaimed, it ‘kills more flies, ants, roaches and other insects in 10 minutes than DDT can kill in 5 days’. The store’s formulation was ‘easy to use’ and would continue to kill pests for weeks. Major changes in the business occurred when a new in-law joined the family.

When Thomas Sammons Jr’s sister married Clay Brazeal, a whole new business enterprise appeared. Brazeal, an air force serviceman stationed at the local Moore Air Force Base, brought specialised training – a master’s degree in entomology from Texas A&M – that helped the Hayes-Sammons Hardware store to further develop its pesticide products. By 1949 company advertisements proclaimed that they had ‘the most complete line of insecticides, fungicides and fertilizers in Texas’. A wide range of chemicals and equipment were listed in the ads, including Cyanogas ‘A’ Dust, Defoliant, Sulphates, Copper Dusts, Toxaphene, Parathion and Pesticide Spray. Agricultural chemicals were even more profitable because of the valley’s booming cotton crop. By 1950, Sammons and Brazeal formed the Hayes-Sammons Chemical Company and expanded the ‘Mission Brand’ line of agricultural products for the agricultural, oil industry and home use markets. The company produced their own line of ‘fertiliser solutions’ along with pesticides.


26 Hayes-Sammons advertisement, 23 June 1933. ‘Real Pest Control’. *Valley Morning Star* (Harlingen, TX); Hayes-Sammons advertisement, 7 July 1933. ‘10,000 Citrus Growers’. *Valley Morning Star* (Harlingen, TX); Hayes-Sammons advertisement, May 1934. “Look” at this!’ *Valley Morning Star* (Harlingen, TX).

Companies like Monsanto, which had depended on oil industry wastes in manufacturing their pesticides were forced to find new resources as the oil industry began using their own wastes to make chemical products. Ads for Hayes-Sammons Mission Brand chemicals ran side-by-side with those from the Shell Chemical Company’s Agricultural Chemicals Division. Puff pieces like this proclaimed the important role of the oil industry in making agricultural chemicals, even mentioning how such chemicals allowed for greater food production in language foreshadowing the argument that pesticides were necessary to feed the hungry. ‘A century ago, nine US farm workers could raise only enough food for themselves and one city dweller’, the current issue of Shell News, Shell Oil Co., noted, ‘Today one farm worker can produce enough for himself and 20 city dwellers’. It would only be a matter of time before the urban hungry would become the global hungry.

Prior to 1970, US pesticide policy was overseen by the United States Department of Agriculture, which focused on developing new and more effective pesticides. Entomologists were encouraged to focus their research to achieve these goals. Starting in the 1950s, the Hayes-Sammons Chemical Company made sure to publicise their pesticide expertise in a variety of ways. The names of company entomologists appeared in newspaper pages from the 1950s through the 1980s. These men helped formulate effective pesticide treatments, provided assessments of insect infestations for growers and even served as guest speakers at garden club events. The company noted

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28 Mac Sebree, ‘Food chemistry of oil industry vital to nation’. Valley Morning Star (Harlingen, TX), 18 Sept. 1960. Given the timing of the article, it might have also been intended to reassure consumers about the safety of the 1960 cranberry crop as much as it was designed to promote the oil and chemical industries.

that it employed agronomists who would also contribute to its pesticide product development. Newspaper accounts also revealed the company’s market expansion into the greater Texas region and across the border with a production plant and international headquarters in Reynosa, Mexico, located directly across from the city of McAllen. There was a production plant located in Indianola, Mississippi as well. By 1957, employee numbers had increased from 150 to 300 with an annual payroll of US$400,000. After more than four decades in business, Hayes-Sammons had ‘become an internationally known manufacturer of insecticides, fungicides, fertilizers and sulphurs’. The company shipped its products around the world – the developing world and most particularly Central and South America. It was considered a homegrown success story, although the company’s eventual demise saw a multitude of hazardous and banned chemicals stored in its old manufacturing plant.

30 Paul Leeper, ‘Home-grown industry has gained world-wide insecticide markets’, The Monitor (McAllen, TX), 9 March 1956.

31 Terence Kehoe and Charles Jacobson, ‘Environmental decision making and DDT production at Montrose Chemical Corporation of California’, Enterprise & Society 4 (4) (2003): 653–54. http://www.jstor.org/stable/23700103; Sampling of news accounts mentioning company entomologists: ‘There’s still a danger from Bollweevils’, The Monitor (McAllen, TX), 29 July 1951; ‘Insects hit fall cabbage’, The Monitor (Mc Allen, TX), 23 Sept. 1952; ‘Fruitworms, loopers damage Texas onions’, The Monitor (McAllen, TX), 25 Nov. 1952; ‘Darklin’ beetles lie in wait for spring tomatoes’, The Monitor (McAllen, TX), 23 Dec. 1952; ‘Soft brown scale is serious citrus threat’, The Monitor (McAllen, TX), 17 July 1963; ‘Breakfast to Open season for Mcallen garden club’, The Monitor (McAllen, TX), 20 Sept. 1964. For expanding markets, see: ‘Darklin’ Beetles’; Leeper, ‘Home-grown industry’; Fletcher Robertson, ‘Opinion divided as to future growth of trade’. The Monitor (McAllen, TX), 1 Dec. 1957; ‘Mission firm adds to staff’, The Monitor (McAllen, TX), 10 Jan. 1960. The story of the Hayes-Sammons plant ends badly, as most accounts of chemical companies do. After years of exposing their workers and residents living in the neighborhood around the plant, it was sold, and sold again, making it difficult to identify which individual or company should be held accountable for the contaminated area and workers’ and residents’ ill health. The former plant became a storehouse where a host of toxic and banned substances were stored and eventually a Superfund site. Local people mobilised and brought a lawsuit against various entities in the early 2000s that continued over the next decade. While a settlement was made, the individuals suffering ill health have not received proper care.
The Hayes-Sammons case revealed the long-standing presence US companies had in overseas markets, one that predated the concerns raised by a CoP in 1981. Like other chemical businesses, Hayes-Sammons appeared to have mixed chemicals at will, and with little concern for the safety of its workers or consumers. While it may have continued its rogue approach to mixing chemicals longer than national companies like Dow or DuPont, it emulated them in seeking out international markets. Even for small businesses like Hayes-Sammons, along with multinational corporations like Monsanto, exporting hazardous chemicals to the Global South predated the EPA’s oversight and enforcement of chemical regulations. As one chemical company executive noted in CoP, their ‘big market [had] always been exports’.\textsuperscript{32} Chemical manufacturers used their decades-long presence and business subsidiaries in places like Colombia or the Philippines once chemicals were banned in the US, a process that accelerated with increasing numbers of chemicals being banned or not receiving approval. New regulatory agencies like the EPA were fighting chemical industry practices that were more than simple expediency but based on longstanding business relationships built up over decades. One problem US companies faced in exporting pesticides was economic – the increasing value of the dollar in the 1980s meant US products were too expensive. CoP could not have predicted this, and European firms benefited in supplying existing markets, which kept the circle of poison in place.\textsuperscript{33}

CoP identified American chemical workers as the first ‘victims’ exposed to the banned substances still being manufactured for export by American chemical companies. It claimed that farmworkers in the Global South suffered greater harm in part because of illiteracy. I would suggest that the level of harm is one of degree rather than kind. Like farmworkers in the Global South, American chemical and farm workers continued to be exposed to banned chemicals as the EPA struggled to review existing chemical registrations much less new ones. Workers in the Global South may have been more

\textsuperscript{32} Weir and Shapiro, \textit{Circle}, p. 1.
\textsuperscript{33} Kehoe and Jacobson, ‘Environmental decision making’, 669.
economically vulnerable, although undocumented people do much of the agricultural labour in the United States, often people migrating from Mexico, Central and South American countries. As people vulnerable to deportation, undocumented field workers would not have had access to better medical treatment than those in the Global South. Additionally, Linda Nash’s work shows that chemical toxicity depends on an almost unlimited number of variables – wind, humidity, other chemicals, kind of crop. The impossibility of measuring toxicity in ‘unruly’ field settings puts all farmworkers at risk. The degree which American farmworkers experienced greater support from unions and environmental groups would offer some advantages to US workers when compared with field workers in Latin America and Asia, although there is some controversy over whether mainstream environmental groups like the Sierra Club cared more about wilderness than human beings.\(^{34}\)

\textit{CoP} minimised other reasons for the exportation of banned chemicals, ascribing regulatory bans in the US as the major cause of the problem. In its concluding chapters it also identified recent business acquisitions of seed companies as something that should cause concern. As oil companies like Shell created chemical divisions to use their own industrial wastes to create products like D-D, companies like Monsanto were forced to look elsewhere for new resource materials to remain a competitive and viable business. Expanding existing markets and finding new ones represented standard business practices. Their blockbuster Roundup herbicide allowed them to

dominate domestic and foreign markets, which saved the business. A UN study on agricultural commodities found that transnational corporations’ interests overlapped with respect to the Global South’s agricultural economies. Transnational corporations ‘hold substantial shares in fertilizer, pesticide, herbicide, and insecticide markets as well as in farm machinery and equipment’. Expanding overseas may have been as much a result of industry need as it was from industry greed.

An examination of CoP offers several points to consider. For one, it revealed the ways the chemical industry reconfigured its manufacturing and sales to dump its most hazardous products in the Global South in the new regulatory climate of the 1970s. It continued critiques of the pesticide problem – making and using toxic chemicals that poisoned industrial workers, farmworkers and people consuming the food and materials contaminated with pesticide residue. It called upon citizens to act and demand changes in chemical regulatory law and its enforcement. It may have underestimated the complementary factors, like longstanding, foundational business relationships that aided multinational corporations in exploiting their international subsidiaries and markets. It also framed the problem of pesticides and the dumping of hazardous materials in mostly policy terms, a kind of government expose reflective of its journalistic origins as investigative reporting.

As CoP needed to do then, and we need to do now, was/is broaden its/our reform agenda beyond US policy makers and international policy makers. The expose revealed the ways transnational corporations moved their chemical products and wastes around the world, most often to the detriment of many (workers, consumers, the poor and the environment) and beneficial only to their bottom line. Several factors have prevented anti-toxic activism from becoming formalised, visible and vibrant: Rachel Carson’s premature

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death, the place-based nature of most anti-toxic campaigns, and the fact that many are led by women. To address the global problem of ‘pesticides and people in a hungry world’, environmentalists, workers, scientists and citizens need to strengthen existing coalitions and build new ones. These alliances, from the local to the global – from South Texas borderland maquiladoras to Ecuadorian cotton fields to Filipino banana plantations – need to forge new circles of health and wealth by stopping the dumping of poisons in the Global South.

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