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Motherhood as a Unifying Theme in Social Movements: Symbolic Essentialism, Environmental Justice, and the Movement Against Bisphenol A in Maine

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MOTHERHOOD AS A UNIFYING THEME IN SOCIAL MOVEMENTS: *SYMBOLIC ESSENTIALISM, ENVIRONMENTAL JUSTICE, AND THE MOVEMENT AGAINST BISPHENOL A IN MAINE*

by

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Abstract

Environmental injustice has typically been an infringement of the rights of poor and minority communities from a "Not in my Backyard" mindset with regards to harmful chemicals. However, the pervasiveness of many chemicals, including bisphenol A has narrowed the exposure gap so that everyone, regardless of class or race, is affected by these chemicals. The United States has a history of being a responsive rather than a proactive agent regarding chemical regulation, but the environmental and health stakes are now too high to continue with this approach. The movement in Maine to reduce exposure to bisphenol A can be seen as a continuation of organizing for environmental justice because the movement incorporates classic organizing techniques and challenges what we perceive as the "environment" that should be regulated by governmental action. The movement in Maine and the subsequent policy put in place to regulate the hormone-disrupting chemical bisphenol A can be used as a model to demonstrate the route that the new tributary of the environmental justice movement can take. The health effects of bisphenol A and similar chemicals combined with their omnipresence demonstrate the need to protect American consumers from the persistent toxic chemicals that are in our lives because of pressure from industry, gaps in regulatory policy, and governmental inaction.

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CHAPTER 1: INTRODUCTION

The only thing that I've heard is if you take a plastic bottle and put it in the microwave and you heat it up, it gives off a chemical similar to estrogen. So the worst case is some women may have little beards.

(Paul LePage *in* Miller 2011)

Voices being dismissed, lack of credibility, and discrimination are some of the classic themes in environmental justice movements, and the scrutiny that the movement to ban bisphenol A has received in Maine has been privy to the same narrow scope. Evidenced by the quote above from the governor of Maine, Paul LePage, the political banter surrounding the chemical bisphenol A (BPA) has resulted in serious misconceptions about the level of harm that the chemical poses to people. Not evident in this quote, however, is that politicians and industry representatives have tried to negate the importance of banning the chemical from all plastics and have done so for their own political or financial gain. Thus, though the health effects of BPA exposure are documented to be serious, the leaders of movement against BPA have had to work incredibly hard to garner political support to create legislation to have the chemical removed from plastics, especially those plastics to which pregnant women and children are exposed. Against all odds, a group of individuals, businesses, and non-governmental organizations were able to rally support for the ban of BPA through the Kid Safe Products Act and have it pass on April 16th, 2008 with no votes of opposition in the State of Maine Senate (Personal interview, December 2011 and January 2012).

Much like other anti-toxics movements in the history of the United States, the movement against BPA in Maine was strengthened by the presence of women as key

organizers. As noted by Lois Gibbs, the leader behind the environmental justice battle at Love Canal, New York:

> We bring the authority of mother—who can condemn mothers?—it is a tool we have. Our crying brings the moral issues to the table. And when the public sees our children it brings a concrete, moral dimension to our experience—they are not an abstract statistic. (*Gibbs in* Krauss 1993, 113)

From using a giant baby bottle at their press releases to lobbying members of Congress using their children as examples of injustice, mothers and women in the anti-BPA movement in Maine were able to transcend both politics and industry to bring a moral voice to the decision table. At this time, the household chemical policy in Maine is the strongest one on the books for any state in the United States and this success was only possible because of the strong, determined, and unique combinations of people who worked for the cause.

In this thesis, I will analyze the movement against BPA in Maine by looking at it as developing out of the myriad of other anti-toxics movements in the United States; I see the movement against BPA as both a continuation of their work and as being enhanced by the progress that was made from past struggles with pollution, social justice, and political activism. In order to place the movement against BPA in context, I will be following the story of one woman who forever changed how we perceive environmental justice: Lois Gibbs. By using her story, I will point out critical themes in the anti-toxics movement, notably the strength and leadership that women bring to the issue as well as the difficulties they face in having their issue recognized by the government. Lois Gibbs' story, from Love Canal to starting an organization dedicated to helping communities with environmental justice struggles, will also demonstrate how environmental justice has

evolved over the years to adapt to the ever-changing environmental and health problems that people are facing. Thus, via Lois Gibbs' story, I will address certain common themes that are part of environmental justice movements as well as address the issue of what constitutes "the environment." By determining what "the environment" represents, I will demonstrate how toxins in household products, such as BPA, represent another avenue for which environmental justice analyses are needed.

With this deeper understanding of what constitutes the environment, I will make it clear that the regulation of household toxins, specifically, is a topic that is shrouded in confusion; there is a policy gap with regards to how to regulate chemicals in the household environment. It is precisely this policy gap that has led to creative organizing on the part of groups like Lois Gibbs' Center for Health, Environment, and Justice as well as the people who were, and continue to be, involved in the fight against BPA in Maine. In identifying this policy gap regarding household chemicals, I will be able to examine the progress made in Maine with regards to hazardous chemical identification and regulation and examine the policy that has been put in place. By linking the work that has been done in Maine with state, federal, and international policies, I will demonstrate how the movement in Maine has led to effective policy-making that can be applied to other situations on both the national and world scale.

Methods

I will be citing two types of sources throughout this thesis: I will be combining primary and secondary research with information gleaned from interviews I conducted with members of the movement against BPA in Maine. In order to be approved to interview people, I had to obtain permission from the Institutional Review Board at the

University of Maine where it was decided that my study would not pose any unnecessary harm to the interviewees. With the intention of protecting the identity and viewpoints of my interviewees, and in accordance with the guidelines set forth by the American Anthropological Association, I opted to keep the identities of my interviewees confidential. Those interviewed have all played leading roles within the movement against BPA in Maine and are widely regarded as experts on the movement. After completing these interviews, I was able to better understand 1) the history of the anti-toxics movement in Maine, 2) the dynamic between the community organizers, the toxics industry, and the people, and 3) the political and social response to the anti-toxics movement. I used this information to supplement book and journal research and help put the Maine anti-toxics movement into a national and theoretical context. This information helped clarify how Maine has reacted to the anti-toxics movement on a social, political, and individual level as the movement is so new that there hasn't been much literature examining it from this point of view at this point in time.

The anthropological perspective of my thesis is how I examine this issue; instead of looking at any one component of the movement against BPA in Maine, I will be looking at the holistic combination of people organizing against toxins in their environment and the link that this organizing has had on political policies, not forgetting the impact that industry has in this whole process. An important part of this thesis is looking at who organizes against toxic chemicals and analyzing how and why they do so; this represents the micro view of "on the ground" organizing. In order to put this into context, I will also take the macro approach and look at how policy makers and industry

receive and act on this activism, which in itself reveals a great deal about how community knowledge is valued and where power and strength lies in a society.

A critical part of my approach is placing the movement against BPA into the context of the broader environmental justice movement. This is problematic because my argument challenges ideas of what constitutes a "minority" and the "environment" to do this. Traditional environmental justice is usually characterized by a racial or socioeconomic minority having their rights infringed upon by industry or government introducing pollution into their community; I argue that the "new" struggle for environmental justice is prevalent in every household because of the presence of household chemicals such as BPA in consumer products. Despite the novelty of this BPA movement in the whole of environmental justice history, it carries with it similar themes, reasons for organizing, and players involved as do other classic examples of environmental justice.

To place my argument that the household environment and chemicals like BPA belong in the environmental justice movement, my approach to this study is linked tightly with the ideas that David Schlosberg, Celine Krauss, and Lois Gibbs have brought to their analyses of environmental justice movements. These include the unique role of women and their influence in determining how the anti-toxins movement has developed on the national scale; that networking has strengthened the movement and allowed for a more comprehensive approach to environmental problems that come up in neighborhoods; and that community organizing is an effective way to advocate for direct change toward the problems that confront a community. In addition to referring to these influential thinkers and activists to provide the background for the central argument of

this thesis, I will be leaning heavily on the work done by Luke Cole and Sheila Foster as they provide a good background for the general motivations, difficulties, and players involved in environmental justice struggles in the United States.

In order to appreciate the diversity of each environmental justice movement and respect the uniqueness of each case of environmental organizing, I will be examining the movement against BPA in Maine as developing out of the national anti-toxics movement but not comparing it to the other movements directly. Since every environmental justice movement is different and is a result of separate cases of injustice, comparing the movements to one another is detrimental to the overall goal of environmental justice, which is to reduce chemical exposure for those who are more vulnerable for different social reasons. Thus, comparing the movement against BPA in Maine to the plight of farmworkers in California is simply not possible because there are too many different variables involved in each case. However, it is possible to look at the movement against BPA in Maine as having developed from the myriad of cases of environmental injustice worldwide and as sharing similar themes with these cases, and that is what I will do in this thesis.

Chapter Summary

This thesis will examine the social movements that occurred behind the ban of BPA in Maine and look at the methods the activists employed and how they employed them to understand how and to what extent the movement was effective at addressing the policy gap that exists regarding the regulation of chemicals in the home. In doing this, I will lay out the movement in Maine as a continuation of other environmental justice movements and their attempts at chemical reform in the United States. To begin, Chapter

One will use the story of Lois Gibbs to provide a framework to examine the issues of socioeconomic justice and gender that are critical to the development of the environmental justice movement. Chapter Two will look at the movement against BPA in Maine, focusing on where it falls into my gendered analysis of environmental justice movements and identifying how the policy gap associated with "household" as opposed to "environmental" toxic chemicals is manifested in this case. In the next chapter, I will briefly look at the health effects associated with BPA and the economic costs of not regulating household chemicals to make it clear on multiple levels why this chemical, and others like it, should be banned at all. Next, in Chapter Four I will provide a description of the policy surrounding the BPA issue in order to analyze how Maine addressed the household chemical "policy gap," how the nation is addressing this same issue, and reveal how Maine fits into larger efforts at the national and international scale to implement chemical reform.

Just as the people in the movement against BPA in Maine learned from their predecessors, this thesis will outline the beginning of the next chapter of the anti-toxins movement: the threat faced in ones' own home from consumer products. Throughout the course of this thesis I will show how and to what extent the movement against BPA in Maine was effective and demonstrate why it represents a new avenue for environmental justice.

CHAPTER 2: THE ENVIRONMENTAL JUSTICE FRAMEWORK

Given the diversity of various community struggles, and the complexity of issues represented in environmental decision making, it is difficult to capture, in one place, the multifacetedness of the Environmental Justice Movement.

(Cole and Foster 2001, 17)

This quote by Cole and Foster captures the difficulty of trying to describe or define the environmental justice movement as a whole. On one hand, the definition for "environmental justice" is simple: "environmental injustice occurs whenever a community or a people experiences a greater environmental burden than that of the majority population" (Rhodes 2003, 29). However, with changing times come new environmental burdens and power struggles that each successive fight against environmental contamination has to adapt to; as indicated in Cole and Foster's statement, the environmental justice movement is "diverse, complex, and evolving" (2001, 12). As such, environmental justice functions to maintain the importance of diversity in the individual struggles that are part of the movement; by making sure not to lump them together, which would result in diminishing the power and importance of the community, environmental justice maintains community power as a critical part of its goals to ensure justice. Thus, the multifacetedness of the environmental justice movement, and the myriad of battles worldwide to preserve the health of communities, makes it difficult to summarize the movement. Cole and Foster, however, continue their view of how the environmental justice movement developed by saying that "we think it more useful to think metaphorically of the movement as a river, fed over time by many tributaries" (2001, 20). Dorceta Taylor is sympathetic to this idea, saying that "the environmental justice movement has multiple foci because it is a grassroots movement that remains

accountable to its constituents" (1997, 66). Therefore, as technology develops more toxins and as more areas of toxicity are discovered, the environmental justice movement has credence in more areas of, and environments in, life. The movement against BPA in Maine is yet another tributary adding to this river and must be put into context in order to understand it as a continuation of the environmental justice movement and as a development in the battle against toxics in the environment.

The reason why BPA and similar chemicals are in production today and causing concern is due to the huge growth in the production of synthetic chemicals in the past 60 years. The use of synthetic chemicals stems directly from the use of chemicals during World War II, where chemicals such as DDT were developed and used against bug-borne diseases in the troops (Hird 1994). When the war ended, industry pushed for these chemicals to be applied to uses in the everyday lives of Americans where the chemicals "fueled productivity advances in agriculture, manufacturing, pharmaceuticals, and many other fields" (Hird 1994, 4). However, the effects that these chemicals had on human health remained unknown. An early precursor to later environmental movements, Rachel Carson's *Silent Spring*, originally published in 1962, awakened the public to the existence of the harmful chemicals in the environment and the detrimental effect they have on human and ecological health (2002; Taylor 1997, 39). In her book, Carson laments the presence of chemicals in our daily lives, saying that "their [chemical] presence casts a shadow that is no less frightening because it is simply impossible to predict the effects of lifetime exposure to chemical and physical agents that are not part of the biological experience of man" (2002, 188). At the point that Rachel Carson was writing, the health effects of chemical exposure had not been well documented; government trucks still

sprayed DDT, a powerful insecticide, throughout communities; there are horrifying pictures of children chasing the DDT cloud around their neighborhood for fun (see Figure 1).

Figure 1: Running behind the DDT truck

Carson's book was the first exposure that most people had to the idea that chemicals in their environment might not be as progressive as was suggested by the post World War II marketing. *Silent Spring* led people to begin to link chemical exposure with the potential health and ecological effects of synthetic chemicals and the book was the impetus for further grassroots action against toxic chemicals in the United States. By calling attention to toxic chemicals in the first publically available manner, Carson opened the way for environmental justice to develop as new chemicals and new environments posed problems to the health of the environment and the people living within it.

Love Canal, New York

The legacy of Love Canal is not over, it will never be over.
Lois Gibbs, December 8, 1999

A quote from a pamphlet created by the Citizen's Clearinghouse for Contaminated Waste states that "The grassroots environmental movement began when the residents of Love Canal refused to live in a poisoned community and watch their children die" (1993). Continuing with this notion, the anti-toxics movement started in the late 1970s with the case of the ironically-named Love Canal in Niagara Falls, New York. A chemical company known as Hooker Chemical had owned Love Canal and used it as a chemical dumping ground for more than 21,800 tons of toxic waste while the canal was under their care (Gibbs 1998, Paigen 1982). When threatened with the town taking the canal via eminent domain for the purpose of building a school, Hooker Chemical sold Love Canal to the town for one dollar with a clause in the sale document that left Hooker Chemical not liable for any health problems that occurred as a result of the toxic chemicals that lay beneath the surface (Paigen 1982). The town built a school at the perimeter of the canal, with the playground located directly on top of the dumping site, though the families who moved into Love Canal were not made aware of the toxic sludge upon which their homes were built (Gibbs 1998). The chemical sludge from the canal soon seeped into basements, puddles, and even became airborne in the town, posing numerous health risks to the residents of Love Canal (Gibbs 1998, Paigen 1982). Asthma, miscarriages, birth defects, seizures, migraines, and central nervous system problems affected the majority of the families in the neighborhood. Because of the clear

threat to her family, specifically her son who suffered from epilepsy, a woman named Lois Gibbs decided to get involved.

In other issues of public health and safety—bomb threats, possible epidemics, etc.—we do not insist on 95 percent probability of harmful consequences before action is taken. Why is that the criterion in environmental health?

Dr. Beverly Paigen, 1982, 32

Lois Gibbs was a housewife with a high school education; her main concern before learning about the dangers posed by Love Canal was keeping a clean house and having her husband's dinner on the table on-time in addition to taking care of her two children, Melissa and Michael. However, after learning that the school Michael had begun to attend was situated at the center of the toxic pollution in her neighborhood, she felt the need to act in order to protect her family. Gibbs, a woman who had once skipped school on days she had to give book reports, organized a survey that she conducted in her neighborhood to analyze the health problems that others in her community were facing (Gibbs 1998). The community was receptive; the connections she was drawing between their health concerns and the toxic landfill their houses on made sense. People couldn't walk barefoot in their backyards for fear of burning their feet; black stuff oozed into basements, filling them with a noxious smell; and even grass wouldn't grow in certain yards (Gibbs 1998). When she presented this information to the state, Gibbs was pushed aside and ignored, especially by the governor of New York at the time, Governor Hugh Carey. Politicians and people in the New York Health Department claimed that, since she didn't have a college degree, her data and her observations must be useless. Gibbs, however, knew better, and she pushed back for her family and her community. She

created the Love Canal Homeowners Association (LCHA), a group of mainly blue-collar housewives who organized and lobbied on behalf of the residents and their community.

At Love Canal, Lois Gibbs and the LCHA furthered the movement against the chemicals in the community by conducting epidemiological surveys with a notable scientist, Dr. Beverly Paigen, and distributing flyers that encouraged residents to report their illnesses to the state of New York (Gibbs 1998). However, their attempts to convince policy makers of their plight by using scientific data proved difficult. Dr. Paigen eventually released an article outlining the faulty testing, poor criterion for determining risk, and political struggles that plagued the people of Love Canal as related to their efforts to have the state of New York conduct a fair, scientific study to determine the risk of living in their community (1982). In her (1982) article, Dr. Paigen describes the numerous ways that the state of New York failed the residents of Love Canal. Included in her work is a statement made by Thomas Bartosiewicz, New York's congressman in 1980, criticizing the position the state took regarding the controversy at Love Canal, two years after the controversy began. In a letter to Governor Carey and in a Senate resolution, Senator Bartosiewicz charged the Department of Health and the Department of Environmental Conservation with "unethical conduct," clarifying the statement best with the following accusations:

- Appointment of a Blue Ribbon panel which had secret members and secret recommendations which were withheld from the public;
- Manipulation of health data . . . to minimize risks;
- Unexplained delays of up to eighteen months before the State was willing to admit a health problem existed;
- Demotion, transfers, and harassment of state employees sympathetic to Love Canal residents;
- An effort by the state to discourage and prevent independent professional health studies.

(Paigen 1982, 35)

Despite the obstacles Bartosiewicz described, Gibbs and the LCHA were able to perform studies on their own to prove the importance of their situation to political powers. In one important discovery by a "mere housewife," Gibbs was able to relate certain illnesses to exposure to former streambeds and underground swales, and Dr. Paigen worked with the LCHA to verify this data (Gibbs 1998, Paigen 1982). Gibbs created a map to demonstrate this correlation, and the map she created was soon published by a New York newspaper, prompting political officials to pay more attention to the contamination (Newman 2001). Eventually, the LCHA realized that the best way they could influence politics was by being loud; they used the press to their advantage and even appeared on day-time talk shows and ABC—even Jane Fonda visited Love Canal to lend her support (Gibbs 1998). What the organization still experienced, however, was a severe lack of attention from elected officials, even when elected officials were presented with scientific evidence of toxic contamination in the neighborhood and pressured them using the media. Industrial powers influenced which scientists would even help Love Canal and political pressure to be re-elected dictated the promises that politicians made but never kept (Paigen 1982).

Finally, after numerous reports of chemical burns, miscarriages, birth defects, cancer, and central nervous system problems over a course of several years, President Jimmy Carter declared a state of emergency in 1978 and had more than 200 families from Love Canal relocated (Newman 2001). Despite the obvious risk to at least 700 additional families in the area, it took years of more health problems and citizen activism before President Carter issued a second declaration of emergency and relocated the remaining families (Gibbs 1998, Newman 2001). The houses of the residents were bought by the

government and a more effective clean-up than one that had been undertaken prior went underway; however, contaminated soil remains to this day, and New York has begun resettling parts of this dangerous community (Gibbs 1998). A positive thing to come out of this predicament, however, was the passage and implementation of the *Comprehensive Environmental Response, Compensation, and Liability Act*, which includes a provision known as Superfund which is used for the identification and cleanup of toxic contamination.

Superfund

Superfund is a program through the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) which the Environmental Protection Agency uses to identify and fund the cleanup of hazardous waste sites (Environmental Protection Agency, Hird 1994). CERCLA was created largely in response to the difficulties the residents at Love Canal faced in obtaining funding to provide for the cleanup of the canal and the relocation of the families who lived there (Environmental Protection Agency, Gibbs 1998). However, the Superfund process is relatively complex and addresses issues on several levels in an effort to "clean up such sites and to compel responsible parties to perform cleanups or reimburse the government for EPA-lead cleanups" (EPA Website). To do this, the EPA has the authority to implement Superfund in order to do the following in response to contaminated sites:

- to conduct removal actions where immediate action needs to be taken;
- to enforce against potentially responsible parties;
- to ensure community involvement;
- involve states;
- and ensure long-term protectiveness.

(United States Environmental Protection Agency 2012)

The EPA praises Superfund and its capability to identify and fix chemical contamination in communities; however, in practice Superfund is often far from perfect. Superfund is notorious for being less likely to respond to chemical concerns in communities of color, which take "20 percent longer to be listed as priority clean-up sites as than white communities" (Cole and Foster 2001, 57). There is also a monetary difference in how much companies that pollute are charged for their pollution based on race, as "penalties in white communities were about 46 percent higher than in communities of color" (Cole and Foster 2001, 57). Another factor that determines how long and how well compensated communities are for their plight is socioeconomic status, as "a ZIP code-level study claimed that Superfund sites in minority and poor areas take longer to reach the NPL and subsequently take longer to be cleaned" (O'Neil 2007, 1088). In response to the race- and income-biased decisions that Superfund is known for, in 1994 President Bill Clinton required an environmental justice analysis of the CERCLA law via Executive Order 12898, which stated (in part) that:

> Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations, and low-income populations.... (Clinton *in* O'Neil 2007, 1087).

Despite this mandate, little to no effect has been seen in reducing the racial and socioeconomic injustice faced by communities with regards to Superfund funding (O'Neil 2007). In addition to these flaws, obtaining Superfund attention and, ultimately, funding, is often a lengthy process and the means by which risks are calculated at Superfund sites are notoriously conservative (Hird 1994). The combination of these factors makes Superfund a contentious issue: when it works, it works relatively well;

however, a combination of factors including race, income, and the type of contamination can dictate whether or not the cleanup is done in a timely and fair manner to those who are most at risk. With more exposure to hazardous chemicals being seen in the household, as I will be addressing later in this thesis, it is critical to note that Superfund is only able to address chemical hazards as they occur at specific sites in the environment, making it inapplicable to address the category of household toxins as products that contain BPA, parabens, phthalates, and other chemicals fall under. Regardless, for the residents at Love Canal, Superfund was their savior; it allowed for them to reclaim their health, although having to relocate resulted in a loss of their community, homes, and livelihood.

Networking

After her work at Love Canal, Lois Gibbs couldn't return to being a housewife; she knew that it was important that she continue her work as an activist to help and protect others who were in the situation she had just escaped. Thus, she began a non-profit organization for that specific purpose called the Citizens Clearinghouse for Hazardous Waste, now known as the Center for Health, Environment, and Justice (CHEJ). The CHEJ "mentors a movement, empowering people to build healthy communities, and preventing harm to human health caused by exposure to environmental threats," and allows the strength of the local community to bring momentum to a movement while connecting them with important people and resources to have success in their struggles against environmental injustice (CHEJ website). CHEJ provides a means for community networking, the importance of which in environmental justice movements

is stressed in Schlosberg's (2002) book. Schlosberg acknowledges the need for effective networking because "many grassroots environmental groups have become increasingly alienated from the major environmental groups and the mainstream environmental lobby," and thus wouldn't have any mechanism to act on the national scale without groups such as the CHEJ to advocate for them (Schlosberg 2002, 108). Networking, Schlosberg notes, "is suggested as a method of thwarting industry attacks" (2002, 122). This is evidenced in the Love Canal case; without the contacts the LCHA made in government, the media, and in the scientific community their case would have been futile. National networks provide the support communities need "by linking local activists, and [the] experience that they brought to the movement" via the "exchange of grassroots knowledge and expertise about social and environmental concerns" (Cole and Foster 2001, 23; Di Chiro 1992, 208). If Love Canal had had a group like the CHEJ to turn to, their plight could have been remedied much faster because of the pressure that a large organization can put on the government and industry to follow through with their promises as well as the experience and expertise they can lend to the community.

Though networking in this sense is important to future efforts to avoid environmental injustice, networking in the movement is by groups like the CHEJ should be limited to a guiding or mentoring strategy. The strength that the environmental justice movement has is in the voices of the people put at risk; by obscuring their voices with organizational jargon, the movement wouldn't be effective to the extent that it has been. Thus, it is critical to show solidarity in the movement while not assimilating all struggles and assuming they share the same goals and desired outcomes. Especially as the movement develops and has become more recognized, Schlosberg notes that it is

important to maintain appreciation of diversity in each movement as environmental justice movements are the result of a specific community's response to the threat of outside pollution to their health. He claims that "it is the myriad motivations and the variety in the movement [that] help us examine the widespread and insidious nature of environmental damage" and thus recognition of where these people are coming from "and their innate validity—need[s] to become a practice of both the movement and its study" (Schlosberg 2002, 21). It is this versatility that allows environmental justice to be applicable to a myriad of situations and places; and in the rapidly developing world in which we live the ability to mold to any number of injustices keeps the movement alive and relevant.

Women as Leaders

Most of your mommas would never have gotten up at a board meeting and say anything about toxic waste because they were trained that "Ladies" don't act that way. Ladies don't take on an issue. I don't know if "lady" is a complement or not.

(Cora Tucker *in* Peeples and Deluca 2006, 64)

As demonstrated in the environmental justice movement at Love Canal, it is clear that the organizers there, as the beginning of the anti-toxics movement, set many of the precedents that have since become commonplace in anti-toxics movements. A highly studied avenue of citizen activism that is central to environmental justice movements is the inclusion and leadership of women throughout the whole process. Women represent 70-80% of all leaders and activists in the environmental justice movement and the case of Love Canal is an excellent case study to see this statistic in action (Peeples and DeLuca 2006, Gibbs 1988). The citizen activism against the blatant infringement on human

rights at Love Canal was led by a group of women, the most recognizable being Lois Gibbs. These women didn't have previous experience working on activist issues; in fact, they were labeled as "housewives-turned-activists" and used their expertise as mothers and caregivers to influence policy from the ground up (Newman 2001, 66). Cole and Foster describe the situation in which many women activists find themselves as follows:

> "I have never been an activist before this fight" is a common story in the anti-toxics movement, in which residents, primarily women, are galvanized to action by threats to their health, their families, and their communities (2001, 22).

Certainly Lois Gibbs, who initially struggled to accept her role as an activist, fits this mold. It is a fact that women are generally more active in fights against toxic chemicals in their community, and there is a plethora of reasons as to why this is the case.

Celine Krauss, who wrote a classic piece on the role of blue-collar women in the environmental justice movement, notes that, "the gender-based division of labor in a capitalist society gives working class women the responsibility for the health of their children"; women have traditionally been considered the primary caregiver of their families and this expectation continues today (1993, 252). As such, when the water begins to taste odd, the air begins to smell funny, the gardens stop growing, and when children become sick, mothers are at the first line of defense. The expectation and desire of mothers to take care of their children takes precedence. In their role as primary caregivers, women are more likely to be staying in the home to take care of their children. This increased exposure to their children permits them to witness the effects of chemical toxicity faster than their husbands and places mothers in the unique position of being able to devote their time to remedying the cause of the toxicity in a way that people who work full-time are unable to do. Gibbs, for example, dropped her duties as a housewife to

tackle the contamination in Love Canal full-time. For the women who are able to do this (i.e. who don't work outside of the home), they can be extremely effective at organizing around the issue because of their networking abilities as mothers. At the grassroots level, Gibbs demonstrated how critical networking is to the success of environmental justice battles; the mothers of the community united as the caretakers of their children, the first line of defense against the unknown hazards the community faced. By relating with other mothers, Gibbs was able to create an organization out of "shared experiences and existing social networks around family, neighborhood, school, work, religion, and racial and ethnic identity" as is common in environmental justice struggles, and thus the Love Canal Homeowners Association was born (Schlosberg 2002, 114; Gibbs 1998).

Women in environmental justice movements bring a unique perspective to struggles against toxic chemicals in communities: they see all environmental problems as "women's problems," because of "the historically and culturally constructed sexual division of labor that places the responsibility of community health and survival primarily in the hands of women" (Di Chiro 1992, 206). The struggle for environmental justice is seen as being intricately linked with "the health of children, the health of workers, the health of poor urban and rural communities, and the health of the natural environment" (DiChiro 1992, 203). Dorceta Taylor adds that the "health of human societies and the natural world are intricately linked and that the health of one depends on the health of the other" and Krauss reinforces this concept as well (1993, 57; Krauss 1993b). In this sense, women connect these issues so that they are not only the caretakers of their children, but the stewards of the community. Women acting as stewards of a community is not an American phenomenon; in fact, it is probably less obvious in America than in other

places. Contanza Ocampo-Raeder's work with Peruvian coastal fishing villages shows that though women aren't directly involved in fishing, the actions they take including who they buy materials from and who they help during difficult times is all carefully calculated to support the community as a whole, usually without men being aware of women's social savvy (2012). Another example of the care women often assume over their community is evident by looking at the work done by the Mothers of East Los Angeles; they organized out of concern not only for their families but for all families who would be affected by a nearby prison siting. The family, in many senses, is seen as a microcosm of the community; women often project their role as caretaker out into the community. Lois Gibbs recognizes this phenomenon in her own experience in Love Canal: she empathized and commiserated with the plights other families faced and felt a sense of protective maternal nature towards her community (Gibbs 1998). This is evidenced at the end of her book, *Love Canal: My Story*, when she described a rally at which the families reunited to oppose the sale of their homes to new residents, saying "it was like coming home to my family, a family I never realized I had missed so much. I was rejuvenated" (Gibbs 1998, 214). In a sense, having a common struggle unites a community just as struggles within a family can bring them together. The common struggle incites feelings of familiarity, dependence, and comfort within the social group. This cohesion is what creates the critical link between health, environment, family, and community that is central to the roles women play in anti-toxics struggles.

Upon assuming leadership roles in their efforts to remove environmental toxics from their communities, women are often quickly discouraged with the process by which information is disseminated and interpreted in the political realm. Krauss effectively

summarizes the wall that women activists face, regarding the notion that these "single issue protests are about more than just the single issue. They reveal a larger world of power and resistance, which in some measure ends up directly challenging the social relations of power" (1993b, 248). Soon after entering the political realm with their qualms regarding the health of their community, women experience marginalization, false promises, and denial of the problem, despite their efforts to present the problem in a rational, comprehensible way to the people in power. Gibbs recalls her dismay with the process vividly, saying that:

> The state's word meant nothing. I used to believe what people in government agencies told me. But here, they told me they were going to do something and then they didn't do it… every single day, we had to go out and fight. They said things to pacify me. I learned the hard way by that experience and by many others: no matter what they say, if you don't follow through and fight for something, it's not going to be done, because they're not good for their word. (Gibbs 1998:79)

Krauss recapitulates this notion by saying that "their [womens'] experience exposes the false assumption that the traditional policy-making process will be democratic and responsive to their needs" (1993a, 115). What Gibbs realized, and what numerous other movements against toxic chemicals have realized, is that in an effort to become re-elected and to save the state money, politicians are willing to negate the fears of a community and demean the women who are leading the movement, often referring to them as "hysterical housewives" and claiming that their experience-based information is invalid (Newman 2001, 72). Through experiencing situations such as this, women are forced to "uncover and confront a world of political power shaped by gender and class," which they encounter more often than not while trying to assert their authority and demonstrate the legitimacy of their points in the political realm (Krauss 1993a, 115). Lois Gibbs is

testament to the capability of women to address these issues in unique and effective methods. Whether it be busing residents to protests, burning effigies of political figures, or performing a baby-carriage blockade, women are able to justify these protests "on the grounds that they were making the system do what it's supposed to do" (Krauss 1993a, 111; Gibbs 1998).

How Women Lead Environmental Justice Movements

The previous section highlights why women become leaders, but inherent in this description is also how women tend to lead environmental justice movements. Peeples and DeLuca characterize the style of women leaders as a compelling, albeit contradictory combination: using "feminine style and maternal militancy" to achieve goals (2006, 62). The maternal militancy is seen in the section on why women lead: the protective, maternal bonds to community and children spur mothers to action. How they act on their "maternal militancy," however, is best characterized by their use of the "feminine style," which "manifests itself in a form of discourse of personal experiences, reliance on anecdotes and analogies as primary forms of evidence, use of indicative structure, and encouragement of audience identification and participation" (Peeples and DeLuca 2006, 65). Thus, I interpret the "feminine style" in a feminist manner: the empathetic inclusion of all materials and people who can benefit the cause. In as such, the environmental justice movement demonstrates this example of the discourse since as a whole it is highly inclusive; the environmental justice movement incorporates gender, socioeconomic, and racial struggles as well. Because of its non-political, issue-based nature, these struggles

unite communities, minorities, and even people of differing political views. As one man involved in the movement noted:

> I'm willing to take help from anybody who's willing to help me… as long as they're willing to be an ally and be on the same side I am and go towards the same goal, I don't care what their politics are like.
> (Dennis Palla, local farmer *in* Cole and Foster 2001, 93)

In addition to unifying people from a multitude of backgrounds and experiences, and likely because of this, women in the movement have come to greatly value the information and experiences that their constituents can contribute to the fight for justice. The information that is valued in these movements is based on experience; however, local knowledge which is seen as "utilitarian and value-laden" is often judged against the notion of "western science… which is taken as definitional of rationality and objectivity" (Di Chiro 1992, 214). This conflict is what women in the movement were often faced with; Lois Gibbs' epidemiological survey of the health problems in her town was pushed aside by Governor Carey because her data as a housewife was not deemed valid. As Di Chiro continues, "that activists, or community people, can themselves produce valid, scientific knowledge is not well recognized nor seriously studied in the literature" (1992, 215). Lois Gibbs' connection between health issues and the underground swales, a type of community knowledge, demonstrates that community knowledge is a valuable asset to struggles for environmental justice. The connection that these women have with their children, the community, and other women allows them to see the signs of contamination early and their use of the "feminine style" provides social connections that allow for ample networking possibilities. In addition, the:

> Popular epidemiology practiced by these women activists offers a new path to scientific inquiry that bridges epistemological and methodological approaches and provides channels, albeit contentious ones, to bring

> scientists and activists together in a more interactive knowledge production practice (Di Chiro 1992, 224).

The unique social and environmental placement of women in the environmental justice movement allows for women to bridge these stylistic approaches to science and inter-social status communication. Community knowledge incorporates not only health disorders but is a holistic and comprehensive account of the "physiological, psychological, and social effects of environmental hazards," taking into consideration how their social situation affects their exposure to toxic substances (Di Chiro 1992, 221). It calls into question what types of knowledge we, as a society, value, and highlights the sexist and classist means of political communication that function as an exclusive rather than inclusive means of providing political access for all members of our society.

Problems with Using "Maternity" to Enter Political Discussions

Though this approach to reach politicians has been effective because of its inclusiveness and empathetic nature, using maternity in this sense proves problematic for how women are perceived and accepted into the political realm. Women are often encouraged to "describe their activism, and perhaps think of it, as driven by concern for their children," because it is more socially acceptable for women to show concern for their children than, for example, themselves (Epstein 1995, 8). Epstein continues this thought by relating concern for children as being morally legitimate "in a way that women's concern for their own health, or desire to become involved in an arena outside of the family, [is] not" (Epstein 1995, 8). This conundrum is indicative of how women are viewed and valued in society; reproductive aspects of life are highly politicized because of the social status, power, and general political view of women today. This

view proves problematic for the progress of women, and relying on the "maternal archetype" in these situations has the "inadvertent result of reducing and simplifying complex political, economic, social, and technical environmental issues… while simultaneously reducing female identity to the facts of women's reproductive capacity" (Stearney 1994, 155). There is more to a woman than her uterus. Though this movement has benefitted greatly from utilizing motherhood as a catalyst for political action, it has been done partially at the expense of denying the greater reasons and needs for environmental justice. Thus, the inclusion of other injustices incurred at the expense of racial and socioeconomic minorities are critical to helping the world realize the multifaceted injustice against which the environmental justice movement organizes. This issue will be discussed more in-depth later in this thesis.

How Love Canal Relates to Bisphenol A

The story of Lois Gibbs incorporates many themes prevalent in environmental justice movements which were also capitalized on during the movement against BPA in Maine. People organized in a similar way, albeit with the help of umbrella organizations (a development out of the Love Canal story), women played a critical role in garnering public and political support for the cause, and organizers were privy to the same political responses of disregard and discrimination. As the movement against BPA in Maine represents a different demographic and time period, the players in the movement against BPA were different than the mothers involved at Love Canal and were on the receiving end of their own host of difficulties. Despite several differences, the movement shares many themes with that of Love Canal, mainly how and around what imagery people

organized. Lois Gibbs' continued work with environmental justice also links this problem with movement, specifically via the issues that the Center for Health, Environment, and Justice has recently been addressing with regards to household chemical concerns (CHEJ). The transition from the "environment" as being concerned only with the outside, natural world to also concerning the home is prevalent in these two cases of environmental injustice. It has also been addressed by Richard Gottlieb, who argues that the environment is comprised of where we work, live, play and eat, expanding our notions of where environmental protection needs to be put into place (2009). It is this transition from the outdoor environment to the indoor environment where a policy gap lies; it is not clear who should be regulating the chemicals that people are confronted with in their own homes in the various products they use daily. The Center for Health, Environment, and Justice has recognized this shortcoming and has expanded their work to also include advocating for the elimination of PVC plastics from consumer products (CHEJ). However, exposure to the chemical "cocktail" that is in personal care products, cleaning supplies, furniture, clothing, toys, and plastic products is creating a new public health concern. Who will regulate exposure to these chemicals is a complicated question in politics, and it is in this transitional time and legislative space that the movement against BPA in Maine finds its significance.

CHAPTER 3: THE MOVEMENT AGAINST BPA IN MAINE

BPA is one of the most well-studied chemicals, and it is just ludicrous to ignore the science… There is a large body of evidence about the hazards of BPA that is irrefutable.

(Susan Shaw, Marine Environmental Research Institute *in* Miller 2011)

The movement against bisphenol A in Maine has been spearheaded by a group of organizations called The Alliance for a Clean and Healthy Maine which was started in approximately 2002 and was organized by the Environmental Health Strategy Center. Besides the Environmental Health Strategy Center, the Alliance is comprised of the Environment Maine Research and Policy Center, the Learning Disabilities Association of Maine, the Maine Council of Churches, the Maine Labor Group on Health, the Maine Organic Farmers and Gardeners Association, the Maine People's Resource Center, the Maine Women's Policy Center, the Natural Resources Council of Maine, Physicians for Social Responsibility/Maine Chapter, Planned Parenthood of Northern New England, and the Toxics Action Center (Alliance for a Clean and Healthy Maine 2010). The majority of these organizations are located in Maine and work on various social issues. For example, the Maine People's Resource Center has worked on creating support for universal health care in Maine as well as the cleanup of a toxic waste site in Orrington, the Maine Organic Farmers and Gardeners Association works on growing support for organic farms and the food they produce, and the Maine Women's Policy Center focuses their attention on advocating for women's issues in government. This expansive list of supporters is an indication of the wide and varied amount of support that this issue has garnered in Maine; as one of my interviewees commented, removing BPA from household products is probably the only issue that both Planned Parenthood and the

Roman Catholic Diocese of Portland have ever both testified in support of in front of the Maine state government (Personal interview, December 2011). The group that has been the most active on the issue of toxic chemicals in household products, however, is the Environmental Health Strategy Center, which is based out of Portland, Maine. They have worked on not only removing BPA from plastic products but also phasing out dangerous flame retardants from mattresses and raising awareness about the harms of PVC. The Environmental Health Strategy Center has been very active on this front in Maine.

The existence of the Alliance for a Clean and Healthy Maine represents a drastic shift from how organizers at Love Canal had to garner support for their cause; these Maine organizations have practice contacting legislators and have built-in networking capabilities to increase the presence of their message in government. However, these networking capabilities also developed directly from the work done at Love Canal. Love Canal was the catalyst for governmental regulation of toxic chemicals; however, the policy-making that occurred as a result of Love Canal organizing (i.e. CERCLA and Superfund) created the policy gap that exists in federal legislation with regards to the regulation of chemicals in household products. This gap is largely demonstrated by the dissonance between the FDA (Food and Drug Administration) and the EPA (Environmental Protection Agency) with regards to whose jurisdiction household chemicals fall under, and it is this gap that The Alliance for a Clean and Health Maine is attempting to address at the state level. The Alliance for a Clean and Healthy Maine is, in effect, a network and each group within the Alliance is able to use its individual networking capabilities to reap public support for issues such as removing BPA from consumer products. David Schlosberg's theory on the importance of networking, in this

sense, is becoming critical in the movement against environmental toxics (2002). At Love Canal, the health effects the residents suffered were clearly due to exposure to the chemicals dumped by Hooker Chemical; however, the exact source of environmental contamination today is often obscure and the health effects are not as immediate or locale-based. We are now presented with a toxic cocktail of cleaning supplies, personal care products, and chemicals in furniture and clothing in our own home (see Figure 2).

Figure 2: Household Chemicals

Thus, it is difficult to discern the health effects of this exposure because the chemicals bind and interact with each other in a myriad of ways that might not be immediately recognizable to the people suffering from the various health problems this exposure can cause. For example, BPA is linked to heart problems, obesity, diabetes, hyperactivity and learning disorders, and has also been shown to alter sexual and brain development. It is

the difficulty in determining the root of these health problems that has shifted this tributary of the environmental justice movement into the hands of organizations such as the Alliance for a Clean and Healthy Maine; the average consumer wouldn't necessarily assume that their heart problems are related to BPA exposure, nor would a medical practitioner dare make that assumption at this point in time.

The Benefits of Networking

Thus, the movement against BPA in Maine is characterized by the presence of these umbrella organizations to bridge the gap between the average consumer and the government policies put in place to protect the home environment, and the Alliance for a Clean and Healthy Maine has been extremely effective in its networking capacity. The groups have been able to be advocates, lobby legislature and agencies, organize parents and health professionals, and use lawsuits and public education to prevent diseases associated with toxic chemicals in everyday products (Personal interview, January 2012). As mentioned earlier, the Environmental Health Strategy Center is the lead organization in the Alliance for a Clean and Healthy Maine and has been involved in the movement against BPA from the onset of the movement; the Environmental Health Strategy Center rallied support for and was involved in the governor's task force on safer chemicals and consumer products as early as 2006 (Personal interview, January 2012). From this involvement, the organization was able to make sure public concerns were incorporated into governmental policies, and this cooperation resulted in the Kid Safe Product Act, which was signed into law by Governor John Baldacci in April 2008 as LD 2048 (Alliance for a Clean and Healthy Maine 2008). As of this time, it is the most comprehensive statewide attempt to regulate chemical exposure via consumer products

(Personal interview, January 2012). The Kid Safe Products Act was only able to be passed, however, because of the input of the public into the hearings regarding the chemical. The Alliance for a Clean and Healthy Maine organized speakers to give commentaries on BPA during the public hearings on the chemical while the legislature was deliberating the Kid Safe Products Act. Groups from within the Alliance as well as individuals testified to the harm of BPA, but in order to gain public input on issues such as the safety of BPA, the Alliance for a Clean and Healthy Maine has had to provide citizens with the necessary information to contact their legislators on issues such as this.

The organizations that are part of the Alliance for a Clean and Healthy Maine have been effective at narrowing the gap between policy makers and their constituents. In addition to empowering citizens to contact their legislators, they have made difficult scientific jargon more accessible by translating it into terms that the average person can understand. Evidence of this is the report the Alliance published, *Body of Evidence*, which documents the presence of chemicals in people from Maine. In it, 13 volunteers were tested for polybrominated diphenyl ethers, phthalates, perfluorinated chemicals, lead, mercury, arsenic, and BPA (Alliance for a Clean and Healthy Maine 2007). Though most of these toxics are impossible to pronounce, let alone understand, the Alliance outlined each in a comprehensible, basic way by stating what products the chemicals were found in, the health effects from these chemicals, and how to avoid them (Alliance for a Clean and Healthy Maine 2007). They then published the report on their website where it is free to download, whereas science articles can often cost 30 dollars apiece to download. This is a prime example of bridging the information gap between scientists and the average person; not everyone has the ability or the knowledge to find and

interpret scientific journals to make better decisions regarding their health. *Body of Evidence* is an example of non-profit organizations bringing the science to the people to allow them to make their own decisions for their health and to empower them with the knowledge necessary to contact their legislators on this issue (Alliance for a Clean and Healthy Maine 2007).

Women in the Movement in Maine

I know I speak for moms everywhere when I say that we don't want our children exposed to dangerous chemicals as they play with their toys, enjoy their favorite foods, or get washed up before bed. We want businesses to get on board and protect their youngest customers, and we want lawmakers to move swiftly and help us protect our families from toxic chemicals.

Cheryl Denis, Giant Baby Bottle Tours, Portland

Despite the seeming control that these umbrella organizations have asserted over the problem of BPA in the environment, the Alliance for a Clean and Healthy Maine has employed several of the same techniques that have characterized the environmental justice movement to great effect; namely, the inclusion of women and the incorporation of personal experience as evidence to support chemical regulation as well as extensive networking. Incorporating the maternal archetype to benefit political goals, though problematic, has been very effective with regards to matters of household chemical contamination. The innocence of children and babies is hard to argue with, and as Mary Davis stated in her report on the cost of preventable childhood illnesses in Maine, we have a moral responsibility to protect the most vulnerable part of our population from these chemicals (2009). Though the Alliance for a Clean and Healthy Maine has spearheaded this movement, they have relied on the action of mothers and the image of children to promote their efforts. In addition to capitalizing on this image, to make BPA

chemical exposure evident to the public, members of the Alliance have tried to make BPA a household term. To do this, they have kept the chemical in the news and have been advertising local movements that individuals can take part in to raise public and governmental awareness of the harm that BPA causes. In this aspect, the classic example of women being key activists in the environmental health movement applies, as the maternal imagery around removing BPA is prevalent.

Perhaps one of the most recognizable instances of the Alliance for a Clean and Healthy Maine using maternal imagery to raise opposition to BPA and other chemicals is with their series of "Giant Baby Bottle Tours." This tour, which visited Portland, Augusta, Bangor, and Brunswick in 2011, was characterized by the presence of a giant baby bottle behind the podium at which the press conference took place (see Figures 3 and 4). Women lined up in front of the bottle during the press conference with babies slung over their hips and toddlers held by the hand to show their support for removing BPA from one of its most dangerous locations: as a component in the lining of cans of baby formula and food as well as in bottles.

The main purpose of this tour was to raise support for the Kid Safe Products Act and to raise awareness of the fact that BPA is present in products designed and targeted towards babies and children, so the role of women in the tour was clear. As the caretakers and primary buyers of consumer goods in households, women hold an important place in determining how much BPA gets introduced into the household. In the news, however, their voice wasn't as influential as their presence; the images supporting the news on this tour always show the women behind the podium but the lack

of voice the women are given in the articles is not demonstrative of the effect that their presence has had on the movement.

Figure 3: Giant Baby Bottle Tour

Figure 4: Giant Baby Bottle Tour

The Love ME Rally

No child should be exposed to the hormone havoc of BPA when they eat their favorite meal. We love Maine, we love our kids, and we want BPA out of our food.

Megan Rice, 2012 Love ME Rally

Though hugely successful in the press, the Giant Baby Bottle Tours usually involved women in support rather than leadership roles. In the news, quotes from the baby bottle tour were generally from leaders in the Alliance for a Clean and Healthy Maine who were the main speakers at these events (see Figures 3 and 4). However, the women whose maternal militancy was being championed by these groups had their say in a different manner. To rally political support to remove BPA from children's products

and to demonstrate the public support and need for the Kid Safe Products Act to be employed effectively, Maine mothers organized the Love ME Rally which was first held on Valentine's Day in 2011 at the State House in Augusta.

Figure 5: 2011 Love ME Rally

This rally focused on encouraging the Bureau of Environmental Protection to employ the Kid Safe Products Act to remove BPA from cans and bottles that are targeted towards infants and children. The Love ME Rally was much more reminiscent of the work done at Love Canal; mothers and their children attended the rally clad in red and pink (in honor of Valentine's Day) and used both the iconic symbolism of Valentine's Day and the presence of their children to make a powerful statement in Augusta (see Figure 5 for a photo of the 2011 rally and Figure 6 for the 2012 rally). Mothers gave statements on the importance of safe chemicals and the rallies focused on the idea of loving the state of Maine and all its occupants, namely the children that the women were organizing to

protect from the harmful chemicals in consumer products.

Figure 6: 2012 Love ME Rally

The activists at these rallies, armed with heart-shaped posters, made statements that illustrate the maternal drive that has characterized the support behind the Kid Safe Products Act:

> "Let's face it—the Kid-Safe Products Act will work if unleashed. As parents, we're not going to stand by and wait while our children continue to be exposed to this dangerous chemical when safer alternatives are out there."
>
> Lalla Carothers, Love ME Rally 2012

Though the Alliance for a Clean and Healthy Maine had been touting motherhood and the safety of children throughout this campaign, the Love ME Rally in 2011 represented a significant switch in attention in the movement. At normal press releases

such as in the Giant Baby Bottle Tour, the women might be present and make statements but they were usually overshadowed in the news coverage by the statements made by the leaders of the Alliance. For example, Mike Belliveau is quoted frequently in press coverage of the movement against BPA, and rightfully so as he has been incredibly influential within the movement; however, it is a pleasant change and more representative of the motivation behind the movement to have more attention given to the women and children for whom this movement is apparently conducted.

By taking a more assertive role, women in the Love ME rallies reminded politicians and the public why this battle is important; it is critical for the future health of our state and its citizens that the Kid Safe Products Act is used to its greatest potential. Combined with the work that women have done in the movement via networking, the Love ME rallies put a face to the movement and made the realm of the political connect with the personal experience of women as feminist organizers often do. This is a large reason as to why the Kid Safe Products Act was even passed in the first place; chemical safety and the health of children is not a partisan issue but an ethical one. By educating legislators and the public about why chemical safety is important and who it affects when chemical safety is ignored, the political becomes personal and an abstract regulatory policy develops tangible results in the public and political eye.

Women in Maine and Networking

Women shouldn't have to have a chemistry degree to know what chemicals will do to their body.

Interviewee, December 2011

Just as utilizing the face of motherhood in the Love ME rallies proved effective at involving women in the movement in meaningful ways, the internet has proved a very effective means for women to be involved in the movement against BPA in Maine. Some examples of mothers getting involved in the movement against BPA in this manner are "mommy blogging," wherein mothers have updated their friends and family about the harms and efforts to reduce BPA exposure via blogs, as seen on websites such as http://www.bpablog.com and http://www.naturemoms.com as well as via popular networking sites such as Facebook (Personal interview, January 2012). In addition to this, the Environmental Health Strategy Center has a blog dedicated to the chemical-reduction movement on their website (http://preventharm.org/News/blog/) and the entries written by both women and men tout maternity as the major reason to reduce the exposure people incur from harmful chemicals in their environment. A blogger named Reeve Chase recently posted the difficulties that parents have with finding BPA-free products for their kids:

> One of the hardest things about being a parent today is figuring out what type of gear, out of the myriad possibilities that exist, we need for our babies and children. You have to think about cost, color, materials, usefulness, and a hundred other things. You need a pacifier? What color? What size? What's it made of? The choices are endless.
>
> Then you have to launch an online investigation into all the chemicals used in the manufacture of the product?

> Yeah, right. No parent I know has the time to do that level of research, and I'm sure even fewer have the inclination. That's why Maine's Kid Safe Products Act is so important, and such a needed safety net for the next generation (Chase 2011).

As recently as February 12th, 2012, another volunteer blogger named Catrina Damrell wrote a blog entitled, "Speak Out for Our Kids: Ban BPA from Can Linings!" in which she reflects on the Love ME rally and outlines the work that can still be done at the grassroots, namely regarding placing political pressure on lawmakers by encouraging the start of a "citizen's initiated rulemaking" by which "we can ensure a public hearing on a rule to remove BPA from baby and toddler foods – just by collecting a few hundred signatures from Maine voters" (Damrell 2012). In addition to encouraging grassroots political action, these blogs generally cite the studies that detail the health problems caused by BPA and demonstrate frustration that government leaders haven't acted swiftly to remove this source of chemical exposure to children.

Figure 7: The Clean Bedroom

Another focus of these blogs is on educating people of the harms of BPA as well as measures one can take to remove it from your home environment, including homemade recipes for canning your own food to avoid BPA-filled can linings and strategies for buying other products that are chemical-free. One blog focused on mattresses, which often contain flame-retardants which are laced with harmful chemicals, and highlighted The Clean Bedroom, a store in Kittery which sells chemical-free mattresses (see Figure 7). The writers of the blogs (both male and female, although the blogs not part of the Environmental Health Strategy Center are largely written by women) also tout local activism as a means to encourage legislative and industry-led action on this issue and update readers on these matters. Even when it isn't women who

are writing the blogs, the themes within them remain the same: BPA and other hormone-affecting chemicals cause significant problems for children due to their developing brains and bodies. Thus, this issue is presented through maternity for a rather legitimate reason. Children are at most risk from exposure to these chemicals and mothers are still the primary caretakers of children and their families, placing the issue of children's health under their sphere of influence.

Internet networking has used the maternal archetype to encourage public, political, and industrial action regarding safe chemicals. By looking at the issue of networking through the lens of "mommy blogging," networking has been enhanced by the internet and allows individuals immense control to share aspects of the movement with anyone in their social group, widening the effect that women (both stay-at-home and those in the workforce) can have. The strength of the internet movement to spread information with regards to BPA was reflected in an event that dedicated a day to raising awareness of the misconceptions surrounding BPA, namely mocking the claim made by Maine's current (2012) governor, Paul LePage, who said that:

> The only thing that I've heard is if you take a plastic bottle and put it [BPA] in the microwave and you heat it up, it gives off a chemical similar to estrogen. So the worst case is some women may have little beards. (Miller 2011)

Lisa Fernandes, a Maine woman, was outraged with this comment and organized an event on Facebook called "Little Beard Day" in which she encouraged women and girls to, "don 'little beards' at high noon, take pictures of each other, [and] congregate during your lunch hour in public places" (Fernandes, Little Beard Day 2011; see Figure 8).

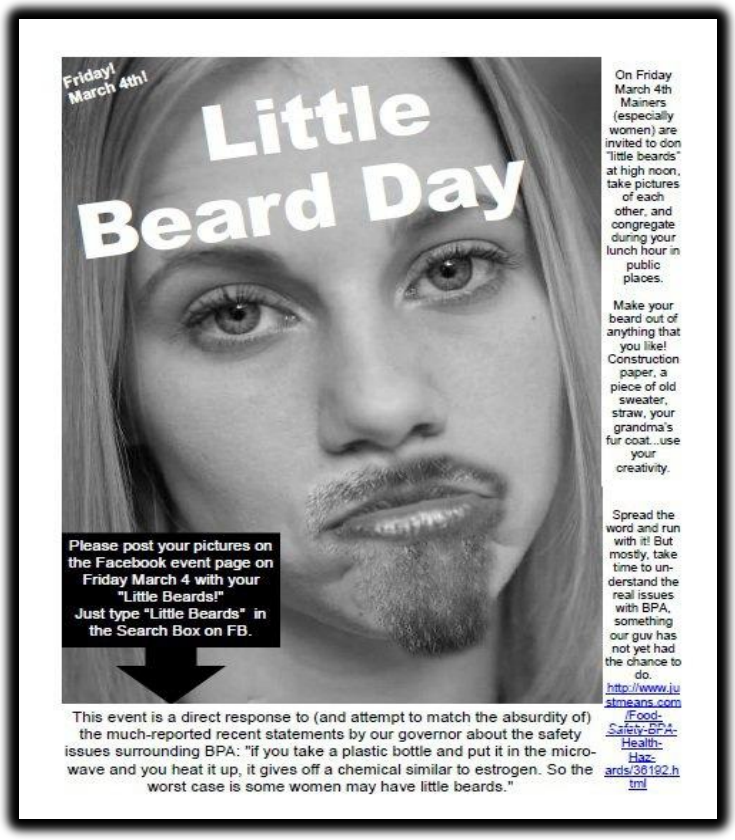

Figure 8: Little Beard Day

The purpose of this movement was to act as a response to the statement made by Paul LePage and highlight the fallacies surrounding the supposed "safety" of BPA. The event was a success: 1,760 people attended the event on Facebook—myself included—and photos of women wearing "little beards" were plastered across the internet (see Figure 9).

Figure 9: The author with a little beard

Newspapers and news anchors from Maine and as far as the United Kingdom carried the story, carrying on the momentum and awareness that one woman inspired (Daily Mail Reporter 2011). Paul LePage's response to this movement was to encourage women to "lighten up," which clearly had the opposite effect on women involved in Little Beard Day and encouraged even more news coverage of the event, the harms of BPA, and the role of women in the movement in Maine (Associated Press 2011).

The internet has clearly changed how people network around these issues since the days of Love Canal. Just as the use of Twitter was influential in bringing about the Arab Spring, Facebook and other social networking sites have allowed social movements to be accessible and relevant to anyone with internet access; this is demonstrated in the environmental justice movement with events such as Little Beard Day on Facebook. In addition to the action that individuals have taken to raise awareness about the dangers of BPA, many of the members of the Alliance for a Clean and Healthy Maine have their own Facebook pages and email lists. For example, the Maine People's Alliance, the non-political counterpart to the Maine People's Resource Center, frequently updates their Facebook fan page with what they are working on, news that is relevant to their cause, and events that supporters should attend to support various social movements. The Environmental Health Strategy Center sends out weekly emails with updates on the progress their organization has made on various issues in addition to their fairly regular blogging.

Networking via popular media sites and email has made the more obscure facets of household chemical exposure clear to the public. Because many people exposed to these chemicals might not be suffering in the sense that Love Canal residents were,

spreading education about the long-term harm caused by exposure to chemicals such as BPA is critical. This chemical, and others like it in households, are slow to harm; thus, people might not immediately link their cancer, diabetes, or heart disease to this type of chemical exposure. If they did, the pervasiveness of such chemicals as BPA makes it impossible to determine the culprit, and most medical practitioners are not equipped to back up such claims at this time. The evasive nature of household chemicals like BPA has made networking critical to the cause; whereas in Love Canal it was relatively easy for the residents to do their own research to determine the root of their health problems, it has been networking via social media that has educated the Maine public about the BPA issue.

Women and Policy

Clearly, the biggest difference between the movement against BPA in Maine and the situation in Love Canal is how people shared information and became involved, though many of the same challenges plagued both movements. The movement in Maine has incorporated many of the same aspects of using the maternal archetype that occurred at Love Canal, but with multiple umbrella organizations to effectively manage people, resources, and to share information. Thus, it is important to note the similarities and differences with regards to the place and role of women within the Maine movement. Worldwide, women are consistently involved in the environmental public health movement in large numbers and in leadership positions. In the Maine movement, Hannah Pingree, a legislator from Maine district 36 (made up of Brooklin, Deer Isle, Frenchboro, Isle au Haut, part of Mount Desert, North Haven, Stonington, Swan's Island, Tremont, and Vinalhaven) has been spearheading many of the environmental health

problems in the governmental arena. A recent mother herself, Pingree was also tested as one of the participants in the Alliance for a Clean and Healthy Maine's *Body of Evidence*, where she showed excessive amounts of many of the chemicals (2007). Her influence on policy has been critical; she believes that "government needs to be fair and proactive in making Maine a good, safe and clean place for families to live and raise their children, start their businesses and find jobs" and her activity as a member of the Alliance for a Clean and Healthy Maine has demonstrated her dedication to protecting Mainers from harmful household toxics chemicals (Pingree 2005; Personal interview, January 2012). She has been a powerful woman to have on the side of chemical safety in the Maine government. Having women in the movement involved in government is significant; at Love Canal, women couldn't easily relate with policy makers because women's status was still significantly lower than it is today and their knowledge was often simply dismissed. By having women as respected contributors in the political arena, "women's" issues take on a new importance, evidenced by the role that Hannah Pingree has taken with regards to household environmental toxins in the state house as an advocate for the chemical safety laws that pass through the legislature.

Though the movement against BPA in Maine hasn't been characterized as much by the action taken by stay-at-home moms as was the case at Love Canal, the issues of reproductive and children's health have maintained the importance of women in the movement since women are still considered the primary caretakers of children. Women make the majority of consumer decisions in the home, including what products are brought into the home as well as decisions regarding healthcare (Personal interview, December 2011). Using this role of caretaker to great effect, women are able to connect

with legislators in both major political parties. Women have been actively testifying for safer chemical policies in the state, sending positive, feel-good messages to legislators that contrast sharply with the messages sent by the chemical industry (Personal interview, December 2011). In Maine, making the issue of BPA apolitical by encouraging legislators to relate with women and the maternal voice they bring to the movement was the catalyst for action with regards to passing the Kid Safe Product Act and beginning the process of phasing out harmful chemicals in the home environment. However, despite the gains made by using the image of women and children for the face of the movement against BPA, there is a controversial side to limiting the movement to its maternal aspects.

Exploiting the Maternal Archetype

Regardless of the success that touting the maternal archetype has had in moving the Kid Safe Products Act forward, using the maternal archetype is difficult to some extent in Maine just as it was problematic in Love Canal. To reiterate Barbara Epstein's point, women are often forced to "describe their activism, and perhaps think of it, as driven by concern for their children," because it is more socially acceptable for women to show concern for their children than, for example, themselves (1995, 8). This attitude and approach is clearly evident in the Maine movement against BPA. Though women's health is implied as it relates directly to the health of their babies, the fight to get rid of BPA is focused on children from a mother's point of view. In addition, the health effects of BPA on men are significant and just as worthy of protection under the Kid Safe Products Act but are ignored, likely because the innocence of babies provides an entrance

point by which to educate the public and legislators of harmful chemicals in our lives. Thus, the controversy of using the maternal archetype is that it limits women to being thought of solely in terms of their wombs and reduces the movement to being only out of concern for children, when it actually affects everyone.

Consequently, the image of mothers and children has been central to this movement, but their voices were most prominently expressed in the news when mothers were given the spotlight at the Love ME rallies and were quoted and acknowledged in the press. At this event, the movement took a similar route as the classic environmental justice example of the Mothers of East Los Angeles (MELA), in which a priest organized mothers against a prison siting in their community. In the Los Angeles case, the choice of mothers was political: their supposed docility and lack of aggression made the priest believe they wouldn't get too feisty at events and had the dual benefit of presenting the community as family-oriented (Pardo 1998). However, the Mothers of East Los Angeles defied this characterization and eventually took more control of the movement themselves; similar to the effect that "mommy blogging" has had on chemical safety today.

In Maine, the maternal imagery has also been central to the movement against BPA; for example, nearly every piece of literature supporting a ban on BPA has an image of a child plastered to the front of it, again relying on the innocence of babies to inspire readers to take action. What differentiates the movement in Maine from the Mothers of East Los Angeles, however, is the level of autonomy that the women were able to gain from being the figureheads of the cause. Women act as advocates in the Maine movement, speak at press conferences, and are the images with which we associate the

movement against BPA, but their presence has been largely dictated by the organizations working for this cause. This situation is largely a result of the difficulty associated with determining the health problems associated with chemicals such as BPA and the extensive networking that has occurred in the movement.

In addition to the technical demands of understanding BPA, the legacy of environmental organizing has firmly cemented the importance of the groups in the Alliance for a Clean and Healthy Maine as leaders of the movement. The groups within the Alliance for a Clean and Healthy Maine are all formed from their own grassroots organizing; the combination of them makes them more effective at the policy level and their grassroots history keeps them accessible at the local level. However, the organization within them is also what has removed the traditional approaches to community organizing that characterized the movements at Love Canal and Los Angeles. Again, this is likely because of the obscurity of the problem with BPA; it is difficult to directly link health concerns that we face today with chemical exposure because such exposure is so pervasive. This matter thus requires some level of expertise that can't be addressed solely at the grassroots level. Whereas Lois Gibbs could trace illnesses in Love Canal as being related to exposure to underground chemical swales, the microscopic and ubiquitous nature of BPA removes this ability from the average person. The increased specialization of community organizing is thus effective for these types of environmental and community problems. However, it is problematic because it removes some power from the women who are being used as the figureheads for the movement while still exploiting maternity and children as the reason for the movement. With good intentions, the Alliance for a Clean and Healthy Maine has used the imagery of mothers

and children to assert authority over the issue of BPA, however, the extensive networking involved in the movement has also removed women as being the decision-makers for using this type of imagery. Consequently, the issue of strategic essentialism and its legitimacy in the movement against BPA in Maine comes into play.

Laura Pulido, a scholar on environmental justice, described this kind of essentialism as when "the characteristics of a particular group are regarded as unitary and fixed or eternal" (1998, 293-294). In Maine, the movement against BPA has been simplified to being an issue for parents to worry about in a maternal sense, but there are significant reasons for males to be concerned about the health matters that they face as a result of exposure to BPA. Though essentialism carries with it its own set of problems, this approach provides a form of resistance towards the status quo by offering a "counterhegemonic discursive framework that is essential to the success of any oppositional struggle," and asserts "the moral authority of the group in question" (Pulido 1998, 294). By recognizing minority oppression in this sense, essentialism reveals that uneven power relationships are rarely acknowledged in the political realm (Ranco 2007). Ecological legitimacy, according to Darren Ranco, is "critically intertwined with the politics of recognition" (2007, 42). Though he was referring to Native Americans, women can be included in this critique of power relationships and lack of recognition as well, and this is what characterizes the struggle against BPA in Maine. Using the maternal archetype has strengthened the movement by asserting the morality of protecting children's health, revealed inequities in political power because of financial strength, and has demonstrated that the recognition of women's and children's health concerns are often overlooked in politics. Thus, by using the maternal archetype and

essentialism in the movement against BPA in Maine, the movement has made the bold claim that women, specifically mothers, are minorities who have not been fully recognized by government. By combining this realization with the other work that mothers did to humanize the issue of BPA to the government, legislators took more action to address the problem. To this effect, essentialism greatly furthered the movement in Maine.

Though essentialism has proven effective at giving a unified voice to the movement and asserting the moral authority of the players involved, there is the concern that by employing essentialism, environmental concerns are reduced to their maternal imagery. Reducing environmental concerns to be limited by their maternal imagery also reduces the roles of women as being limited to their mothering capabilities (Epstein 1995). However, with the case of BPA the health effects could not be more ubiquitous. In addition to the problems that concern everyone, notably cardiovascular problems, obesity, and diabetes, autism, and hyperactivity, BPA exposure in males leads to less testosterone and problems with the development of sexual organs (Lang et al. 2011, Xi et al. 2011). Thus, reducing the problem of BPA to be a mother's issue diminishes the importance of having the chemical regulated for all members of a society. By using essentialism and the maternal archetype, the issue of BPA has bridged political and philosophical divides in Maine politics. However, the use of the maternal archetype was planned and used as a tactic by the organizations working to influence policy makers on the issue. This represents a dual conundrum: there has been a lack of merit that women have been given in the public news coverage with regards to their role in the movement; however, at the same time they haven't been as active in leading the movement because

of the necessary role of the Alliance for a Clean and Healthy Maine in determining the scientific root of the health concerns associated with BPA. Since women as grassroots organizers in Maine haven't been as influential as they were at Love Canal, it isn't as necessary to give them attention in the media; however, this poses the issue of whether the Alliance for a Clean and Healthy Maine fairly represented in their cause to remove BPA from products. The maternal imagery represents a useful way to portray the issue of BPA exposure to garner political support, but it also reduces women to their motherhood and involves them more as actors or tools than as useful contributors to the problem. Though this approach has been effective politically because of its inclusiveness and empathetic nature, it proves problematic for how women are perceived and accepted into the political realm. Also, this approach limits the success that has been gained in the movement as being only representative of children's issues when, in reality, BPA poses a whole slew of health concerns for the entire population regardless of age or sex.

The Voice of Industry

In Mexico, anyone with money can control things. And here, it is just a little bit more discreet, but it amounts to the same thing. That is the way it seems to me here. Because it is a large company, it can pay off everything, it can pay the lawyers and everything.

(Juanita Fernandez *in* Cole and Foster 2002, 100)

In all of this grassroots movement against BPA, industry has not been silent. "Industry" here refers to manufacturers, distributors, and vendors of plastic goods as well as lobbyists for their organizations, including the American Chemistry Council among other groups. For example, the Trade Association has opposed banning BPA from children's products on the grounds that it will hurt companies, conveniently also shielding which companies oppose the measure in their own form of networking

(Personal interview, December 2011). Industry also has ties in the government; in the 2010 gubernatorial election in Maine, Paul LePage received 225,000 dollars from the Michigan Chamber of Commerce, and it has been suggested that the chemical industry funneled the money through here to put sympathetic policy makers in office (Shortall 2011; Personal interview, December 2011). In addition to this, the reform that Paul LePage later suggested to roll back environmental regulation in the state (which would have included severe cuts to the Kid Safe Products Act) was partially funded by out-of-state chemical companies and trade associations (Sharon 2011).

Despite these significant monetary contributions to political campaigns and the associated cost of funding their efforts to reduce regulatory action, the chemical industry claims that the cost and technology barrier associated with removing BPA from consumer products is too substantial for them to consider. The major complaint that industry has against removing BPA from cans, specifically, is that it is too expensive to do so, however "numerous canned food companies have replaced BPA without significant cost problems, and BPA bans in Japan, China, and in various states in the U.S. have spurred innovation" (McGarity et al 2011, 3). Packaging insiders also say that a major barrier to removing BPA from the lining of cans is the "lack of a ready replacement for epoxy that meets the canned food industry's needs" (Ritter 2011; Voith 2009, 1). To some extent this is true; Eden Organics has phased out BPA in all of its cans except for its tomato products because the high-acid food deteriorates the currently available BPA-free alternatives; however, as the vice president of Eden Organics put it, "don't use tomatoes as an excuse for your beans" (Voith 2009, 2). The technology is out there if industry is willing to take on the extra cost necessary to protect the public from its products.

In addition to their unwillingness to reduce BPA usage in their products, industry has made claims that "polycarbonate bottles contain little BPA and release traces considered too low to harm humans" in order to justify their inaction (Associated Press 2011). Contradicting this fact, though, is new evidence that, "scientists are increasingly associating BPA with U-shaped and inverted U-shaped dose-response curves, showing that adverse effects occur *especially* at low doses" (Hill 2009, 4). Industry is making many claims to protect its assets, but the actions of more progressive and socially responsible companies are proving these claims untrue (Associated Press 2008). Nalgene, Kleen Kanteen, and Camelbak began phasing BPA out of their products as early as 2008 and even Walmart is vowing to only sell BPA-free plastic in the near future (Associated Press 2008; Personal interview, December 2011). Consumer pressure has greatly increased the drive for industry to find viable alternatives to BPA, but as one interviewee put it, "We can't shop our way out of this problem" (Personal interview, December 2011). Industry will not buckle to consumer pressure alone, especially as many of the companies to incorporate BPA-free can linings (Eden Organics, for example) produce organic foods that not everyone can afford to buy. All of my interviewees said that the inaccessibility of chemical-free options for everyone due to budget restrictions is a prime reason as to why the government needs to impose tighter regulation on chemicals such as BPA; one interviewee said that people should not be expected to be held responsible for their exposure to BPA when they literally can't avoid it, and it is at this point that the government must step in and take action (Personal interview, December 2011).

The Consequences of Success

Though the industry has been territorial over its right to produce products laden with BPA, the national public outcry against the chemical coupled with the grassroots organizing has led to many companies removing BPA of their own volition. The use of organizing techniques common to environmental justice movements has helped the Maine state government realize that environmental health caused by household contaminants is not a partisan issue, and the Maine Senate ultimately voted 35-0 to pass the Kid Safe Product Act and begin phasing chemicals such as BPA out of household products. This victory in Maine was possible because of groups such as the Alliance for a Clean and Healthy Maine bridging the gap between the average citizen and legislators as well as making scientific jargon comprehensible to those affected by the findings. Though controversial, the maternal imagery that the organizations brought to the movement was critical to its success (Interviews with author, December 2011 and January 2012). Consequently, it is clear that the principles on which people organized and how they did so were effective in the same way that these principles led to success at Love Canal. Health was the primary concern around which people organized at Love Canal and grassroots organization mainly focused on women helped "make the personal political" so as to transcend both politics and industry to bring a moral voice to the decision table.

The fact that people have had to organize against chemicals such as BPA in Maine demonstrates the policy gap with regards to federal chemical regulation in the home. Chemicals in food products are (supposedly) regulated by the Food and Drug Administration and chemicals in the environment are regulated by the Environmental

Protection Agency via acts such as the Toxic Substances Control Act (TSCA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Toxic Substances Control Act "authorized EPA to secure information on all new and existing chemical substances, as well as to control any of the substances that were determined to cause unreasonable risk to public health or the environment" and the Comprehensive Environmental Control Act "created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment" (Environmental Protection Agency). Thus, TSCA was a means to control substances whereas CERCLA was a means to clean up areas where chemicals had created excessive pollution. However, TSCA generally ignores several classifications of products, including many products that are found in and around households. This is where the problem lies, until the recent movement for "greener" plastics, cleaning products, and other household goods, the "household" was not considered part of any "environment" under regulation by the federal government. This is what makes the movement against BPA in Maine so important to the future of chemical regulation in the country: the Kid Safe Product Act addresses this gap in policy and places the power to regulate household chemicals in the hands of concerned citizens and state governments.

WHY THE MOVEMENT IN MAINE MATTERS

Reducing the exposure of the next generation to dangerous chemicals, using a scientific approach, could be as significant a public health revolution as recognition of the need for clean water.

Kellie P. Miller, Maine Medical Association

In order to understand the movement against BPA in Maine and in the United States, it is important to know why people are organizing against the chemical. People are mainly organizing because of the subtle yet ubiquitous effects BPA can have on human health and out of frustration with the lack of regulation of these household chemicals. Furthering this concern regarding BPA is the fact that it is found everywhere: "The United States alone had a production volume of 2.3 billion pounds in 2004, up from 16 million pounds in 1991" (Carra 2011, 155). BPA is a chemical additive used to make polycarbonate plastic. At room temperature, the chemical is a white solid that smells faintly of hospitals, but it can be manipulated to suit many needs (Nilsen-Kupsch 2011). BPA is currently used in many products including televisions and other electronics, food storage containers, and toys as well as in a number of "dyes, enamels, varnishes, flooring, adhesive, fungicides, antioxidants, dental sealants, and artificial teeth" (Body of Evidence 2010, 26). Its omnipresence makes it difficult for consumers to avoid the chemical—even printed receipts have been found to have trace amounts of BPA on them (Braun et al. 2011).

Before its use as a polycarbonate additive, BPA had an entirely different function which enforces how and why people perceive BPA as being related to health problems today: in the 1930s, BPA was first developed as an estrogenic chemical in hormone replacement therapy (Nilsen-Kupsch 2011). However, since its creation in this capacity, other hormone replacement methods were deemed more feasible and BPA was put aside

in favor of other alternatives such as diethylstilbestrol (DES), though DES was later linked to certain types of cancer, birth defects, and miscarriages (Hauser 2011). Despite its failure as an estrogen replacement therapy, BPA had a bright future in other uses. Scientists experimented with the chemical and found alternative uses for it: it could be added to plastics to make them harder and BPA could also be added to resins to line materials such as cans to protect the contents from the metal of the can (Hauser 2011). Its prowess as a cost-effective option in these functions brings us to the predicament we face today as a growing number of people have begun to question the safety of bisphenol A, particularly in our most vulnerable population: babies and children. Studies have shown that "BPA's ubiquity leads to such frequent doses that even healthy adults cannot metabolize all of the chemicals in their bodies. Fetuses and infants, with their less developed metabolic systems, are at particular risk of adverse health effects" (McGarity et al 2011, 2). Thus, concern regarding BPA is frequently related to the particularly harmful effects it has on children, who don't have the capability to speak up for their own health. This concern is rather new and timely, and by 2008 BPA "was the poster child bad-boy chemical representative of hormone-disrupting chemicals" (Personal interview, January 2012)

Negative Health Effects

BPA, despite its usefulness in many diverse applications, has been linked to a plethora of negative health effects, including heart problems, obesity, and diabetes and has been shown to alter sexual and brain development. Other problems that are potentially linked to BPA exposure are hyperactivity and learning disabilities. These

findings are troubling to the American public: why hasn't the government taken an active role in controlling this substance to protect the people? Numerous studies reiterate the danger of BPA, and despite this there have been years of inaction at the federal level. These health issues are too critical to ignore, however. In a study of approximately 1,200 people, Lang et al. found that "higher BPA concentrations were associated with diagnoses of cardiovascular disease and diabetes" and that among those without diabetes or cardiovascular diseases, high levels of BPA were associated with high concentrations of certain liver enzymes, even after testing for alternative reasons for these results (2008, 1307). In another similar study, Silver et al. found that "urinary BPA concentrations were significantly positively associated with the prevalence of [Type 2 Diabetes]" and they note that, though their findings are significant, because they studied adults it is possible that children, who have been found to be very susceptible to BPA exposure, could be even more at risk than their statistically-significant data demonstrate (2011, 6).

Other studies documenting the effects BPA has on the brain and sexual development of fetuses follow the trend of the before-mentioned findings. Babies and children are likely more at-risk to experience negative effects of BPA on their sexual development, noted in a study that observed that "the perinatal period seems to be a critical 'exposure window' for BPA to affect reproductive neural circuits in hypothalami of both male and female mice" (Xi et al. 2011, 414). They further note that exposure to BPA results in lower testosterone concentrations in male mice and "may interfere with steroid hormone synthesis pathways and the release of the more potent endogenous steroid hormones," leading to less-pronounced male features in mice (Xi et al. 2011, 415-416). Similarly, Adewale et al. add that:

> … it is important to recognize that the impact of BPA … is not limited to the process of brain sexual differentiation, but also encompasses many other endpoints including: the timing of pubertal onset, regulation of the estrous or menstrual cycle, gonadal and reproductive tract development, body weight, hormone sensitive cancers as well as social and maternal behaviors (2010, 47).

The effects of BPA on sexual development have been targeted as an important reasonfor women to avoid the chemical, notably when pregnant. The impact BPA has on health, as listed by Adewale et al., are no trifle problems, and with girls beginning puberty at younger ages than before and the prevalence of cancer increasing; it is thus expected that BPA could be contributing to these public health concerns.

Finally, because the placenta does not shield fetuses from neurotoxins and children do not develop their own protection from neurotoxins until approximately six months of age, BPA exposure in the womb has been linked to hyperactivity and learning disabilities in children (Grandjean and Landrigan 2006). The gendered response of these effects is clear: young girls reveal more effects from exposure than young boys, including higher levels of "anxiety, hyperactivity, emotional control, and behavioral inhibition" (Braun et al 2011, 878). Though girls are greatly affected by the presence of BPA in-utero, boys, too demonstrate effects from exposure, including decreased aggression and hyperactivity (Braun et al 2011). This has been demonstrated in male rodents indicating irreversible changes in cognitive development as a result of BPA exposure (Xu et al 2007). These neurological changes that occur during fetal development are likely due to the importance that estrogen has on the developing brain: since BPA is a xenoestrogen and mimics its hormonal activity, it affects the development of fetal brains in-utero.

The Social Importance

The question remains, however: why is all of this important? Anyone out-of-touch with children these days might just assume that parenting has resulted in the changes in behavior that we see in children. However, the increasing numbers of children in Maine who have been exposed to environmental toxins has increased so that nearly one in five children require special education (Department of Education 2008a). Whether or not political powers agree that environmental contaminants are partially to responsible for the increase of special education needs in the state, the higher cost for special education programs is staggering: Maine spends nearly 300 million dollars on special education needs each year, and this has been increasing at about 6.7 percent yearly (Department of Education 2008b). The majority of these cases are likely preventable through better control of environmental hazards, and as Davis states, "[reduction] of childhood exposure to environmental pollutants would provide a sizable economic benefit to the state" (2009, 14). Besides the high cost that these childhood epidemics pose to the state, it is important to note that children are not able to make decisions regarding their exposure to BPA or other chemicals, especially in-utero when exposure can have lasting effects on cognitive development. Thus, Davis puts it best when she says that the "unique susceptibility of children to environmental pollutants and their inability to make informed decisions to limit their risks makes the issue of reducing childhood exposures a moral imperative" (2009, 14).

The diverse uses of BPA are what add to its now pervasive effects on human health; it is nearly impossible for the average Mainer to avoid exposure from the contaminant in his or her everyday life. Historically and even today, environmental

injustice has been specifically linked to race. BPA narrows this gap; while minorities are still affected more by BPA because of increased exposure due to socioeconomic status, the wealthy and the majority populations are suffering from its effects as well. Though environmental justice is never permissible, the action against BPA has brought the issue of environmental injustice to everyone, and this increased awareness has the capability to spur the government and people to respond to other areas of environmental toxicity in their lives, regardless of their race or income level. However, as we learn more about the negative health effects associated with BPA exposure, attempts to reduce contact with the chemical prove both difficult and costly partially because of lack of cooperation from the chemical industry. When it becomes impossible for the general public to avoid a chemical while employing every power they have, organizations such as those in the Alliance for a Clean and Healthy Maine feel that the government must step in to push regulations onto companies so as to protect the health and well-being of the constituents who are unable of enacting such change themselves (Personal interview, December 2011). They argue that consumers should not have to hold a degree in chemistry to be able to make safe choices for themselves and their family, and it was out of this concern that the movement in Maine arose to put in place the Kid Safe Products Act (Personal interview, December 2011).

The Kid Safe Products Act

The Kid Safe Products Act is, as mentioned before, the most comprehensive attempt by a state to regulate chemicals that are found in consumer products, notably those found in children's products. It was passed in 2008 without a single vote of

opposition in the Maine Senate (35-0) and was signed into law by Governor John Baldacci (Interviews with author, December 2011 and January 2012). How the Kid Safe Products Act works is, in part, what makes it significant as an attempt at removing harmful chemicals from the household. It does not simply ban BPA from toys and children's food containers; it is a framework within which the Maine Department of Environmental Protection can work to ban all harmful chemicals that arise in the household (Personal interview, January 18th, 2012). Giving the Maine Department of Environmental Protection the capability to examine and remove chemicals one-by-one under the same legislation is what makes the law so progressive.

Under the Kid Safe Products Act, the Department of Environmental Protection (DEP) has the capability to make an expansive list of chemicals of concern, on which there were approximately 1,700 listed before pesticides and certain pharmaceuticals were removed from coverage by the Act, which lowered the number of chemicals of concern to 1,400 (An Act to Protect Children's Health and the Environment from Toxic Chemicals in Toys and Children's Products, *Laws of Maine, 2008*; Personal interview, January 2012). From this list, the DEP examines the chemicals on certain guidelines to include chemicals under the high priority list (known as "Chemicals of High Concern to Children,") on which BPA was listed. To make the high priority list, the DEP examines the following criteria:

1) Is the chemical found in humans?
2) Can Maine children be exposed?
3) Are safer alternatives available?
4) Has the chemical been banned or restricted by another state or government?

(Ranslow & Becker 2010)

For a chemical to be added to the high priority list, all of the previous criteria need to be met except for the third; if there are no safer alternatives, a ban on the chemical is still considered (Ranslow & Becker 2010; An Act to Protect Children's Health and the Environment from Toxic Chemicals in Toys and Children's Products, *Laws of Maine,* 2008). There are several benefits to this method: it is based on scientifically-supportable evidence, it is an easily understood process with reproducible steps that are taken, and it specifically indicates which chemicals are of higher concern to children (Ranslow & Becker 2010).

After determining the chemicals that belong on the high priority list, the Kid Safe Products Act requires that manufacturers report on their use of priority chemicals in their products that are sold in Maine and assess if there are other chemicals that could fill the same purpose as the high-priority chemical at a comparable cost (An Act to Protect Children's Health and the Environment from Toxic Chemicals in Toys and Children's Products, *Laws of Maine,* 2008). This is a significant aspect of the Kid Safe Products Act: it passes the burden of removing chemicals onto the producing companies instead of passing the cost onto the consumer or the state by giving the DEP the ability to regulate offending companies (Personal interview, December 16th, 2011). Though chemical companies have complained about the cost of testing these chemicals, Davis' report about the cost that the state of Maine has incurred as a result of chemical exposure reveals that the state has shouldered a higher financial burden from lack of regulation of chemicals such as BPA (2009). Thus, the previous steps all determine the "safety" of household chemicals. After all these informative steps have been taken, under the Kid Safe Products Act the state of Maine can prohibit products containing a priority chemical from

being sold if a population is at risk (An Act to Protect Children's Health and the Environment from Toxic Chemicals in Toys and Children's Products, *Laws of Maine,* 2008).

The Kid Safe Products Act takes a fundamentally different approach to determining the harm caused by chemicals; whereas the Toxic Substances Control Act at the national level performs risk-benefit analyses which assume that more exposure will result in more risk, the Kid Safe Products Act takes the hazard approach. Thus, if a chemical is identified as harmful, there is no need to identify a "safe" level of exposure because the chemical would simply be banned. This is a more precautionary approach that is based on the premise of preventing harm rather than accepting a certain level of harm (Personal interview, January 18th, 2012). Another significant aspect of the Kid Safe Products Act is, by giving the DEP the ability to regulate offending companies it passes the burden of removing chemicals onto the producing companies instead of the consumer or the state (Personal interview, December 16th, 2011). It is important to note, however, that TSCA's scope is different than that of the Kid Safe Products Act; whereas TSCA focuses on requiring companies to self-regulate, many substances including food, drugs, cosmetics, and pesticides are excluded from TSCA. This is the gap that the Kid Safe Products Act works to fill.

Flaws in the Kid Safe Products Act

Though the Kid Safe Products Act represents a significant development in how and by whom household chemicals are regulated, it still has flaws. The Department of Environmental Protection is a governmental agency and is thus privy to the extreme

fluctuation of support that can occur with changes in political power. Even before the Kid Safe Products Act was passed, seven amendments to it were suggested that would have "stripped the bill of its teeth" (Personal interview, January 2012). This situation makes it clear that bipartisan support of this bill had to be earned through hard work; it is not easy to garner support for environmental protections, and the harsh political climate continues to provide difficulties for implementing this law. There is currently a jargon battle in the Department of Environmental Protection that is suggesting a new definition of the word "contaminant" that will limit the regulation of BPA, and the LePage administration has had a significant impact on the Department of Environmental Protection (Personal interview, January 18th, 2012). Upon being elected as governor, Paul LePage tried to kill the Act by proposing an amendment that was drafted, in part, by the chemical industry; he wanted the Kid Safe Products Act to require legislative approval after the Department of Environmental Protection had identified and suggested a ban on the chemicals (Personal interview, January 18th, 2012). The legislation did not go anywhere, but this demonstrates how those in power have relatively easy access to change the bill for their own political agenda. Since this amendment didn't pass, LePage has been attacking the Department of Environmental Protection in other ways, including cutting staff and funding from the Department. Also problematic is that the Kid Safe Products Act gives huge discretion to the Department of Environmental Protection. How strongly they enforce the Act is problematic, especially when political agendas can dictate who is on the Department's staff, how much funding the Department receives, and the tension that arises from working in a political climate that might not be sympathetic to the goals of the Kid Safe Products Act.

Significance and Implications

Despite the flaws that exist with any piece of legislation, the reasons for the passage of the Kid Safe Products Act are significant issues in our world today. People are exposed to chemicals at previously unheard-of levels and serious health concerns such as diabetes, obesity, neurological disorders, and cancer are on the rise. However, the ubiquity of exposure to these chemicals makes it nearly impossible to pinpoint the culprit for certain disorders, and we are still unaware of how chemicals might interact with other introduced chemicals in the body. On top of this growing problem, there is the issue that, as a country, we are unsure as to the best way to monitor exposure to these chemicals. Does this fall into the Food and Drug Administration or the Environmental Protection Agency's jurisdiction? Historically, environmental justice cases were related to toxic waste dump sites or chemical plants being located in areas of high minority concentration or lower socioeconomic status. However, now that science is showing that the issue is in every single person's household the matter of jurisdiction proves difficult to determine. Yes, BPA is in the linings of cans and in reusable food containers, but it is also prevalent in other products such as children's toys, compact disks, dental sealants, and a plethora of other devices (Nilsen-Kupsch 2011). Where does the Food and Drug Administration's authority end and the Environmental Protection Agency's authority begin? Should there be a divide, or does this new tributary of environmental justice lend itself to recognizing the overall harm that chemicals of this nature cause, regardless of where they are found? These questions are not easily answered—especially at the federal level—so states have been the leading authority in directing action towards this issue via chemical reform. In this sense, the movement in Maine is extremely important.

The way people organized in Maine brought the peoples' voice to the legislature and led to bipartisan support for a bill that could easily be heavily disputed and dismissed in unfavorable political climates. Currently, "89 percent of the more than 9,000 roll-call votes cast by state legislators favored tighter toxic chemical regulation," regardless of party affiliation (Belliveau 2010, 6). In this sense, the movement in Maine paved the way for other comprehensive chemical safety laws to be passed in other states and at the national level by demonstrating that safe chemical reform is not a political issue; it is an issue of health, families, and equity.

CHAPTER 4: THE KID SAFE PRODUCTS ACT AS A MODEL

Giving kids a healthy future safe from toxic threats is not a partisan issue. Our federal chemical system is outdated and ineffective. State legislators have a responsibility to follow the best science and get unnecessary dangerous chemicals out of everyday products.

Senator Mark Grisanti (R-Buffalo), New York State

Despite the limitations in the Kid Safe Products Act, it was the first comprehensive chemical reform policy undertaken by a state, and it is still more progressive than attempts at chemical reform in other states and at the national level. Since the Kid Safe Products Act was passed in 2008, only three other states have passed similar laws (Interviews with author, December 2011 and January 2012; Belliveau 2010). Though other states have passed legislation banning individual chemicals, only Maine, Minnesota, California, and Washington have created methods and guidelines for banning chemicals in the future. States are being forced into action on this issue because the federal government has failed to provide adequate chemical protection via the Toxic Substances Control Act which is overseen by the Environmental Protection Agency:

> This trend resulted from state legislators and governors from both parties responding to growing scientific evidence of harm, strong public outcry, and the failure of Congress to fix the broken federal law that allows dangerous and untested chemicals to be used in everyday products and materials. (Belliveau 2010, 6)

Since the Toxic Substances Control Act at the national level is so flawed, the Kid Safe Products Act has provided other states and the country guidelines by which to begin banning harmful chemicals. In this sense, one interviewee claimed that "Maine is having a national impact" because of its progressive policy (Personal interview, January 2012). National attempts at chemical reform pose their own unique problems to this situation,

however. As one interviewee noted, "Augusta works much better than Washington these days"; thus, permitting the states some agency to regulate chemicals as they see fit is critical even in the face of national chemical reform via the Safe Chemicals Act of 2011 (Personal interview, January 18th, 2012).

Problems with Federal Reform

The lack of action at the national level with regards to chemical regulation is related to a number of issues, the most obvious currently being the tumultuous political climate that makes it difficult for any reform to get passed. The less-obvious issues are the heavy hand that the chemical industry has in lobbying against efforts to ban harmful chemicals, the current economic situation that does not lend itself to further regulation of companies, and there is confusion regarding how to best regulate these chemicals and by whom the regulating should be done. This last issue is what has created the "policy gap" that has resulted in the significant time delay in regulation of household chemicals at the federal level. As Sachs et al. note, "Managing the risks posed by BPA presents fundamental challenges to the regulatory systems that Congress designed to protect the public and the environment from toxic chemicals," (2011, 28). As the law currently stands, the "fundamental challenges" that the EPA and the FDA face greatly hinder and even prohibit them from adequately regulating chemicals such as BPA.

The Food and Drug Agency

As recently as January of 2010, the Food and Drug Agency had "stated uncertainty about its legal authority to regulate BPA absent legislative action" (Carra

2011, 170). Its concerns were mainly related to whether BPA occurred in such frequency in food that it could be labeled a "food additive," or if the migration of BPA into the food was actually a significant amount. Technically, BPA's food applications fall under the guidelines of the FDA, however the FDA has been reluctant to take regulatory action. In 2008, FDA officials claimed that uses of BPA with food were safe, though in 2010 it changed its opinion amid mounting evidence of the gender-bending effects of BPA on humans, expressing "some concern" about BPA's effects (Carra 2011).

Part of the reason why the FDA has been so reluctant to regulate BPA is because it has been relying partially on industry-funded science which it has an agenda to protect. Carra has suggested that industry-funded studies minimize the chronic effects that other studies suggest BPA has while also demonstrating that BPA does not have any immediate effects (2011). The issue of industry-funded science and the FDA is relevant for two related reasons: 1) the FDA relied mainly on industry-funded science when it first determined that BPA was safe in 2008 and 2) the FDA has a process for accepting pertinent science that ignores many peer-reviewed studies. The FDA relies on information that is obtained using Good Laboratory Practices to assure the quality of data that they accept while considering regulation of chemicals (Carra 2011). While there is nothing inherently wrong with the Good Laboratory Practices criteria, industry is more able to obtain data using this method because they have more resources than academics do. For example, the majority of grants through organizations such as the National Institutes of Health do not allow for research using this method, thus "most of the best life scientists in the country are funded by the NIH [National Institutes of Health], but scientists cannot use these funds to do GLP studies" (Carra 2011, 166-167). This

oversight has resulted in skewed information being taken into consideration for FDA regulation.

In addition to this concerning oversight, "BPA occupies a space in FDA's regulatory landscape that is complicated by a number of overlapping legal mandates, regulations, exemptions, and loopholes" (Sachs et al 2012, 10). Loopholes included the "Grandfathering" –in of safe chemicals that were already in production in 1958 as well as the "housewares exemption" in which "industry presumes that a petition [to have a chemical determined safe] is not necessary if the end-use of a chemical will be a 'houseware' item like paper cups or plates, plastic utensils, or cooking utensils" (Sachs et al 2012, 10-11). These are just a couple of the problems that the FDA has had to face with regards to BPA regulation, and industry has spent the last 50 years finding new ways to avoid regulation of their cost-effective chemicals.

In the face of these loopholes and the flaws with the process the FDA uses to determine chemical safety, it is critical to note that when science was supporting evidence that BPA has serious effects on people it still took two years for the FDA to determine that BPA might cause "some" harm. The fact that it took the FDA two whole years to think about regulating this chemical emphasizes the point made earlier that "Augusta is working better than Washington right now" and thus determine that giving agency to states to deal with these issues is important.

The Environmental Protection Agency

The other agency that has the ability to regulate BPA in the United States, the EPA, is also suffering from contention within the agency. As a government agency, the

EPA has found that the need to be transparent invites critiques from policy makers and industry and their subsequent involvement in the regulatory process. In her paper on the development of the EPA, Sheila Jasanoff notes that this transparency causes problems with legitimacy, noting that with regards to carcinogen X:

> The presumption was that the validity of the policy-relevant fact (X's carcinogenity) could only be established by making explicit the stages leading to its creation. Instead of putting the claim into a black box as in normal science, EPA exposed its contents, as required by the rules of political and legal legitimation; in so doing, the agency practically compelled questioning of the coherence, logic, and wisdom of its reasoning.
>
> (Jasanoff 1992, 203)

This quote demonstrates the pervasive effect that politics can have on scientific findings in the EPA, and the movement against BPA in Maine is no different; mixing politics and science results in political games in scientific arenas, diminishing the effectiveness and apolitical positions that regulatory agencies can have. In addition to this challenge, the EPA is in a unique position in which they fill a double role of both doing scientific studies and proposing regulation based upon those scientific studies, making it difficult for peers to evaluate both their science and political findings.

Despite these difficulties, the EPA has been somewhat proactive on the issue of BPA. It issued a "BPA Action Plan" in March of 2010 "outlining its intentions to increase scientific evaluation of BPA, monitor, and analyze environmental exposure pathways and risks, and… potentially issue new regulations under the Toxic Substances Control Act" (Sachs et al 2012, 9). However, this Action Plan also stated that the EPA would defer to the FDA with regards to all "human-related risk or exposure analysis of BPA" (Sachs et al 2012, 9). With the FDA very reluctantly taking on BPA and the EPA

relying on the Toxic Substances Control Act (TSCA) to effectively regulate BPA, the policy gap with regards to household chemicals continues.

The Toxic Substances Control Act (TSCA) had been debated in the United States Congress for six years before it was finally passed in 1976; the passage of TSCA was encouraged partly by the problems incurred at Love Canal. TSCA is meant to regulate the production and use of chemicals that pose risks to human health and the environment by developing safety information on chemicals, but is "perhaps the most complex, confusing, and ineffective of all of our federal environmental protection statutes" (Plater 2004, 830). The President's Cancer Panel's 2008-2009 annual report says that TSCA "may be the most egregious example of ineffective regulation of chemical contaminants" (Reuben 2010). There are at least two problems with TSCA: part of the problem with TSCA's regulatory ability is that it requires the "manufacturers of covered materials to generate and report such data [regarding chemical safety] to EPA" (Sachs et al. 2012, 19). Second, it gives the EPA strict guidelines with regards to how it can ban toxic chemicals:

> First, EPA must determine that the chemical in question presents an *unreasonable risk of injury to health or the environment.* Second, according to the U.S. Court of Appeals for the Fifth Circuit, EPA must compare its preferred regulatory option to *all other possible regulatory options available* under TSCA and other statutes and determine that the net benefits of the agency's chosen option *exceed the net benefits of all other available options*…
>
> (Emphasis added, Sachs et al. 2012, 22)

A group of members in the Senate also said that, "TSCA placed severe burdens on EPA's ability to require safety testing or regulate a chemical – burdens so onerous that over the past 30 years EPA has been able to require testing for only about 200 chemicals out of more than 80,000 on the EPA's inventory" (U.S. Congress 2011, 1). In addition, these

criteria are so strict that the EPA has only been able to completely ban the use of five chemicals under this statute in the last 40 years, representing literally only a handful of the thousands of potentially harmful chemicals that are persistent in our day-to-day life. These two examples make it clear that this process is overwhelmingly time-consuming and difficult to complete.

The Safe Chemicals Act of 2011

In response to the problems with TSCA, Senator Frank R. Laurenberg (a Democrat from New Jersey) introduced the Safe Chemicals Act in 2010, although it has since been revised and is now known as the Safe Chemicals Act of 2011. The Safe Chemicals Act addresses the shortcomings of TSCA with regards to regulating and banning harmful chemicals. First, whereas now the "EPA is required to prove harm before it can regulate a chemical," under the Safe Chemicals Act "industry would bear the legal burden of proving their chemicals are safe" (Denison 2011, 1). This passes a significant cost off to industry and represents a switch from a reactive means of regulating harmful chemicals to a proactive means of regulating them. Related to this switch, whereas now TSCA requires that a chemical be shown to cause harm in order to require testing, the Safe Chemicals Act takes the more proactive approach of allowing the EPA to require safety information before a chemical is known to cause harm (Denison 2011). Also significant, the Safe Chemicals Act would address the problem of chemicals being "grandfathered in" prior to 1958. It would provide for "new and existing chemicals" to "be subject to safety determinations as a condition of entering or remaining on the market" (Denison 2011, 1). Thus, the Safe Chemicals Act addresses the major

loopholes apparent in TSCA that have permitted harmful chemicals to be marketed and sold to the public without proof of their safety.

In addition to these changes, the Safe Chemicals Act creates more transparency between government and industry. At present, companies are permitted to keep secret formulations such as the ingredient "fragrance" confidential, although the ingredient "fragrance" generally means that there are harmful parabens and other chemicals hidden in that formulation designation. Under the Safe Chemicals Act, these secret formulations would be subject to EPA regulations, thus limiting the ways in which companies can hide chemicals in their label jargon (Denison 2011). In the face of new chemical knowledge, the Safe Chemicals Act permits the EPA to expedite chemicals through the regulation process, making for quicker regulation of chemicals that pose a risk to the public (Denison 2011).

These changes represent a significant power shift in chemical regulation by which the regulatory agency will not be at the mercy of industry. It makes information about chemical prevalence and the harm from these chemicals in products public and thus promotes innovation and the development of safer alternatives. To support these ultimate goals for chemical safety, the Safe Chemical Act "requires EPA to establish a program to develop market and other incentives for safer alternatives, and a research grant program targeted at priority hazardous chemicals for which alternatives do not presently exist" (U.S. Congress 2011, 2). All in all, the Safe Chemicals Act addresses the most egregious shortcomings of TSCA and represents a significant change towards proactive regulatory measures towards curbing the ubiquity of chemicals in the household environment.

The Combined Regulatory Approach

Thus, with the issue of federal regulation of BPA representing a challenge to both the FDA and the EPA, the best solution at present is for each agency to act within the power they have to monitor and regulate BPA however they can. BPA and other chemicals like it present a challenge to these agencies because previous protocols that these agencies had established "were designed to investigate chemicals that impact human health in relatively straightforward ways," using a "the dose makes the poison" approach (Sachs et al 2011, 8). What we are realizing with more research, however, is that chemicals often have effects as they build up in bodies and that effects can happen at both high exposure levels and at low exposure levels in a U-shaped curve (Hill 2009). In addition to this, chemicals such as BPA are posing risks in many areas of life; Sachs et al. argue that:

> … to address all the risks posed by BPA, regulation must also focus on the myriad sources of BPA in our lives that FDA cannot address. This is a job for EPA, whose authority is broader than food packaging and thus can reach up the supply chain to the manufacturers of the raw material (2011, 18).

The expansiveness of chemicals in our home and natural environments makes the future of regulation of these chemicals an issue for both the EPA and the FDA. Whereas the EPA mostly addresses only environmental exposure and risks, the FDA needs to take on the human health effects of this environmental exposure. Further, TSCA (and the proposed Safe Chemicals Act) would grant the EPA "jurisdiction over the many manufacturers and commercial users of BPA who profit from the 95 percent of the chemical that does not go into baby bottles and sippy cups" (Sachs et al 2011, 20). The best approach to national regulation of BPA and other chemicals of concern is to utilize

the expansiveness of regulation that the FDA and EPA are capable of. Hopefully the Safe Chemicals Act will streamline this process and make it more feasible for the agencies to take this approach.

With regards to Maine, the future of national chemical reform via the Safe Chemicals Act is similar to the approach taken in the Kid Safe Products Act in many ways, and Mike Belliveau has argued that the Safe Chemicals Act was created with standards from the Kid Safe Products Act in mind (2010). Both acts make the prevalence of chemicals and the harm they can cause public knowledge, identify chemicals of high concern for quicker regulation, require safer alternatives, and give the regulating agencies more power to control harmful chemicals. They provide the power shift necessary to put regulatory power back into the respective agencies instead of allowing for industry to find and create loopholes to save money at the expense of human health.

International Responses to BPA

Internationally, BPA has long been touted as a chemical of concern. Canada first identified it as harmful in 2008 and reacted with a proactive limited ban on the chemical (Vogel 2009, 1). Later, Canada strengthened the ban, announcing plans to "move ahead with proposed regulations to prohibit the advertisement, sale, and importation of BPA-containing polycarbonate plastic baby bottles" (Stone et al 2010, 5). France and Denmark have both banned the use of BPA in children's products as a proactive measure in 2010 until more tests could be done to prove its safety (Stone et al. 2010, 5). Other governmental regulation has been taken in Germany, where regulatory agencies have strongly urged companies to use alternatives to BPA (Stone et al. 2010, 5). Other

countries have recognized the importance of proactive as opposed to reactive measures in this sense; this approach has been taken in European countries with regards to the safety of personal care products as well. Some countries have demonstrated that a ban on BPA results in industrial innovation. Japanese industry took a proactive stance in the face of a ban on BPA with most companies willingly replacing BPA with alternatives such as thermoplastic polyester coatings and polyester coatings before a governmental ban went into effect completely that insisted upon this action (Stone et al 2010, McGarity et al 2011). The success that other countries have had with banning this chemical and the technological innovation that has occurred as a result of the ban should encourage the United States to take action to ban BPA.

National Regulation Possible

In conclusion, regulating BPA at a national level, though difficult, is possible. Other countries have managed to do so just fine, and the Safe Chemicals Act of 2011, modeled in part after the Kid Safe Products Act in Maine provides the government the ability to do so much more effectively than the outdated Toxic Substances Control Act allowed for. There must be communication between the FDA and the EPA, however. The expansive arena of exposure for chemicals such as BPA means that regulation is going to require a united approach from the two organizations in order to prevent each organization from expanding its resources too thinly and into areas that aren't necessarily under its jurisdiction. However, between the capability of the FDA to protect human health and the EPA to monitor industry and environmental contaminants, the power to provide such regulation already exists in federal government; the Safe Chemicals Act of

2011 is merely undoing the restraints that prevent the government from effective regulation under the Toxic Substances Control Act. With this bill, the federal government will be able to put pressure on industry to prevent the problem of environmental contamination from even developing at its source.

CHAPTER 5: CONCLUSION

On March 30th, 2012, the FDA issued a ruling in response to an environmental group's petition to ban BPA in food-storing containers. Despite the hundreds of peer-reviewed articles that demonstrate the harm that BPA causes, the plethora of other countries and states that have banned the chemical in its entirety, the manufacturers and retailers that are phasing out BPA, and the many organizations that have educated Americans about how to avoid BPA to protect their health and encouraged them to contact their legislators to have it banned on a national level, the FDA decided that BPA did not warrant a significant level of harm for it to be banned from food containers. Their ruling stated that, "The FDA has carefully reviewed your citizen petition and has determined that it failed to provide sufficient data and information to persuade the FDA to initiate rulemaking… The FDA is denying your citizen petition in its entirety." (Peeples 2012). Public health experts and organizations have expressed frustration with the ruling:

> "We believe FDA made the wrong call," Sarah Janssen, senior scientist in the public health program at the NRDC, said in a statement. "The agency has failed to protect our health and safety -- in the face of scientific studies that continue to raise disturbing questions about the long-term effects of BPA exposures."
>
> (Peeples 2012)

Their frustration is warranted. The FDA relied on the same sorts of evidence that it relied on for its preliminary decision on BPA—science that followed the Good Laboratory Practices method—which was largely funded by industry (Carra 2011, Peeples 2012). One study that had been conducted by the FDA intended to measure the levels of BPA in people after eating canned food, the FDA never actually measured the amount of BPA in

people's diets beforehand (Peeples 2012). In addition, the detection limit for BPA in their study was "four times higher than in previous studies," ignoring the peer-reviewed evidence that BPA in small doses can have just as much of an effect on hormone signals (Peeples 2012). This decision in response to the people's petition was disappointing, but not surprising given the FDA's history of ignoring peer-reviewed science to back-up their decisions. Though the FDA was careful to note that this was not a final determination on the safety of BPA but simply a response to the petition that was filed, their track record of accepting industry-funded science in lieu of peer-reviewed science doesn't look promising for future decisions on the chemical.

In light of this recent decision, the movement against BPA in Maine gains new importance. The movement against BPA in Maine represents a new tributary of environmental justice in which socioeconomic and gender disparities play a role. Traditionally, the plastics industry has been able to fund controversial science and push through harmful chemicals because of the financial pull they exert in the political arena. In Maine, however, the movement against BPA subverted this pressure and used grassroots organizing as well as personal stories to fight industry pressure and pass the Kid Safe Products Act. Injustice, in this case, is not having the political power or money to influence the safety of consumer products. Love Canal was the catalyst for this type of political action on toxic chemicals in our daily lives, and with Love Canal and the subsequent passage of CERCLA and TSCA, the policy gap that defines the need for the movement against BPA in Maine developed. When individuals don't have the power to protect themselves from the pervasive chemicals that industry laces into consumer products the government must regulate the very production, use, and sale of those

chemicals. Until the Kid Safe Products Act and other state-led efforts to curb the use of hazardous chemicals in consumer products were introduced, this policy gap was ignored. Now, however, it is obvious that this policy gap is being addressed at both state and federal levels, as evidenced by the Kid Safe Products Act in Maine and the proposed Safe Chemicals Act of 2011 at the federal level.

The movement against BPA in Maine encompasses many aspects of past environmental justice movements and makes connections with future problems with chemical exposure from household products. The importance of women to the movement, specifically in the mothering role, was critical just as it was at Love Canal. Women have been used as the face of the movement against BPA, their testimony was used at legislative hearings and press releases, and people equate their involvement with bringing the moral ground upon which the Kid Safe Products Act was passed. However, extensive networking regarding chemical use in Maine prevented women from being the absolute leaders of their involvement in the movement; the Alliance for a Clean and Healthy Maine was the organizing group around this issue, so the use of women was an orchestrated mechanism to benefit political goals. This essentialism, though highly effective, is also linked with reducing significant environmental problems to their flashiest aspects; in this case the use of essentialism stressed the effects that BPA has on children while ignoring the significant effects it has on other portions of the population as well. Despite this, in order to be heard in politics the use of strategic essentialism by the Alliance for a Clean and Healthy Maine played a critical role and was likely a contributing factor to the passage of the Kid Safe Products Act.

The Kid Safe Products Act is significant because of its ability to address the policy gap left behind by FDA, CERCLA, and TSCA. As the first state-created comprehensive chemical policy it provides the outline for other states and the nation to address the harmful chemicals in our daily lives. In all, the movement in Maine is important because, just like the policy gap that the Kid Safe Products Act addressed, this movement fills a gap between traditional environmental justice cases and the new future of environmental justice that will fight chemical infringements in the home.

Consequently, the movement in Maine can be seen as a model for future environmental justice movements based on household chemical safety. The interplay between all the groups involved in this movement is what made the Kid Safe Products Act able to be passed with relatively little opposition. The Alliance for a Clean and Healthy Maine filled an important role with regards to educating people about the hazards of BPA, encouraging people to contact their legislators and take action on this issue, and essentially serve as a liaison between people, industry, and government. To be the liaison with industry, the Alliance for a Clean and Healthy Maine had to relay the public's concern about BPA and work with industry to determine the cost-effectiveness of using alternative materials in their products. In the end, however, it is the government that determines whether or not this information will be considered useful and valid in determining whether certain chemicals should be regulated or banned at all. In Maine, the government took several steps to encourage public input on the Kid Safe Products Act, including holding public hearings, approaching the problem of BPA as a bipartisan issue, and ultimately making a comprehensive, malleable policy to deal with harmful chemicals in the home. Despite the (at times controversial) methods that were taken to

reach this goal, the Kid Safe Products Act would not have passed without the work contributed by the Alliance for a Clean and Healthy Maine. Through their efforts, they make it clear that chemical safety is important, necessary, and not a partisan issue.

The Kid Safe Products Act is a very progressive piece of legislation, if used correctly. It allows for chemicals to be designated as a priority chemical with the Department of Environmental Protection if it meets certain criteria, such as if the chemicals is found in humans, if children are exposed, and if the chemicals has been banned or restricted in other places (Ranslow & Becker 2010). By giving the DEP the ability to regulate companies, it also passes the burden of removing chemicals onto the producing companies instead of giving this responsibility to the consumer or the state. However, one of the most important aspects of the Kid Safe Products Act is that it is not necessary to determine "how much" of a chemical people can be exposed to; if a chemical is identified as harmful, there is no need to identify a "safe" level of exposure because the chemical would simply be banned. With so much uncertainty regarding the safety of certain chemicals and new evidence that reveals harm occurs in people in a U-shaped curve for BPA, this proactive stance on chemicals is necessary to ensure that people are not harmed by industry's cost-saving measures (Hill 2009).

The process of fighting for a stricter chemical safety policy in Maine reveals several shortcomings of national chemical safety policies through the FDA, CERCLA, and TSCA and shows that reform is needed at the national level. In the current political climate, evidenced by the FDA's recent decision on the purported safety of BPA, this proves difficult. Any positive reform at the national level would have to respect the work done at the state level as well, as states are able to be more proactive than the country as a

whole at this time; to reiterate a point that an interviewee made, "Augusta works much better than Washington these days" (Personal interview, January 2012).

The movement in Maine and the movement at the national level for the passage of the Safe Chemicals Act of 2011 represent a new tributary of the environmental justice movement (Cole and Foster 2001). Injustice in this sense is largely based on money, though in a different way than this is usually seen in environmental justice cases. The issue here is based on the might and expansive power of industry in the United States; the capital that industry maintains makes it nearly impossible for the average person to effectively oppose the chemicals that they are being exposed to. Thus, the industry is the oppressor in this situation and every single American is the victim. Clearly socioeconomic class plays a role in this problem as well; income dictates whether or not one can buy expensive glass containers and non-canned food to avoid being exposed to BPA. However, the ubiquitous nature of plastics and BPA means that everyone comes into contact with BPA throughout their daily lives whether it is by using plastic food ware, having dental sealants, or simply touching a receipt. This is what the environmental justice movement is now up against: the presence of potentially harmful chemicals in every facet of our lives.

The aforementioned situations, including addressing the policy gap that exists with regards to chemical safety, reducing the power of industry to dictate what is safe in the household, and translating complex scientific jargon into comprehensible language to encourage local action represent what the movement is evolving into. This clearly represents a significant challenge for people and organizations such as the Alliance for a Clean and Healthy Maine to fight. It is this difficulty that makes the movement in Maine

so important to further state and national reform. Groups such as the Alliance for a Clean and Healthy Maine play a critical role in bridging the gap between people, industry, and government and are equipped to use their extensive networking techniques and strategies such as essentialism to encourage governmental action on chemical safety. The movement against BPA in Maine and the subsequent passage of the Kid Safe Products Act is monumental not only because of the policies that it has already influenced, but because of the strategies and techniques it outlines for future attempts at chemical reform in the world. In the face of the difficulties public health organizations are already facing at the national level to implement chemical reform, the importance of states' decisions and the public movements that inspire them are all the more important in the chemical safety movement. In the face of scientifically unsupported decisions by the FDA, local movements are critical to ensuring the continued safety of household products and the health and well-being of the American population.

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Kalie A. Hess was born in Bangor, Maine and spent the majority of her childhood in Orono where she graduated from Orono High School in 2008. Kalie has a major in anthropology with minors in French and Spanish and has been very involved on the University of Maine campus. She has been inducted into Phi Beta Kappa and Phi Kappa Phi, is a member of the All Maine Women, and was a member of their younger affiliate, the Sophomore Eagles Honor Society. In addition to her academic achievements, Kalie has been involved in the Central America Service Association, the Student Women's Association, the Green Campus Initiative, and the Black Bear Mentoring program on-campus. After graduating in May 2012, Kalie will be moving to Albany, New York where she received a scholarship to pursue her Master's in Public Health at the University at Albany.