THE INFLUENCE OF ENVIRONMENTAL JUSTICE ON THE DIOXIN CONTROVERSY

by

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ABSTRACT

Frames are underlying structures of belief and perception through which we view the world. Frames determine what counts as fact and what arguments are taken to be relevant and compelling. In a public debate, the dominant frame holds significant power by influencing the way in which a particular problem is defined and by governing what solutions are seen as appropriate. Challengers recognize the power held by the dominant frame. As such, challengers seek to overthrow the dominant version of reality by promoting their own alternate frame. In doing so, they hope to shift public opinion in their favor with the intent of influencing public policy.

The dioxin controversy is a public controversy and can be thought of as resulting from two competing frames: industry's dominant frame, and the emerging challenger frame sponsored by the environmental justice movement. While the former is rooted in 'sound science' and cost-benefit analysis, the latter extols the virtues of democracy, equity and the precautionary principle. Victory in the dioxin debate will ultimately be won or lost depending on which of these frames manages a sustained dominance of public opinion.

In light of this discussion, this paper examines the influence of the environmental justice movement on the dioxin debate. From a framing perspective, the two principal frames are traced through their evolution. As such, the influence of the environmental justice movement can be seen by examining the manner in which industry’s frame has shifted over time. With respect to public opinion, a three-year (1993 - 1995) survey of articles in the New York Times, Los Angeles Times and Chicago Tribune was undertaken in an attempt to determine each frame's relative power in the popular media. Based upon this analysis and the related media survey, this paper concludes with a frame-based discussion of the current strategies employed by the environmental justice movement.

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I would like to think that it was a thesis writing experience which moved Winston Churchill to coin the phrase, "From the wonderful cloudland of aspiration to the ugly scaffolding of attempt and achievement." While framework may not be visually appealing, it is the backbone of any endeavor and is, therefore, something to be both acknowledged and valued. That being said, this page allows me the chance to recognize two fine groups of scaffolders: those who helped me get here in the first place, and those who guided me once I arrived.

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I enjoyed writing this thesis, but at times I was prone to just a few periods of doubt and anxiety. It was during these moments of anguish and self pity when I would look over at my new daughter, Katelyn Rose, who was busy trying to stick all her toes in her mouth. She would soon realize that Dad was watching, whereupon she would break into one of her beautiful smiles before returning to more pressing matters. What this taught me I have no idea, but whatever it was gave me pause to step back, count my blessings and put things in a more humane perspective. For that, I am grateful.

I owe so much to Sue. Being married to a student isn't easy and her support, strength and courage touched my heart. We experienced graduate school as we have our many other adventures: hand in hand. This thesis is as much hers and it is mine for we did this together; I cherished the privilege of sharing it with her.

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p.s. Thanks Mom and Dad!
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PART I - BACKGROUND

This thesis is concerned with the influence of the environmental justice movement on the dioxin controversy. Environmental justice, however, is a term that is subject to many interpretations. For some, environmental justice is the fight to right the wrongs of environmental racism and it strongly linked to the civil rights struggles and other efforts of people of color.¹ For others, environmental justice is not unique to communities of color, but rather, it is a fight that is shared by all who desire social justice and a stronger voice in environmental decision making: “When we fight for environmental justice, we fight for our homes and families and struggle to end economic, social and political domination by the strong and greedy” (CCHW, 1990). For the purpose of this thesis, the environmental justice movement is a social movement and is thought of as an element in the broader struggle towards social justice. It will, therefore, be defined as:

Environmental Justice refers to the belief that both environmental benefits and environmental costs should be equally distributed in society. Environmental Justice is premised on the notion that the fundamental rights of toxic contamination victims have been systematically usurped by more powerful social actors, and that ‘justice’ resides in the return of these rights.²

Using this definition to set the context in which the environmental justice movement operates, we will now begin this thesis by setting the background of the major issues. Following the introduction (Chapter 1), the dioxin controversy is introduced in Chapter 2, as is the Citizen’s Clearinghouse for Hazardous Waste, a major player in the environmental

¹ Environmental racism is the racial discrimination in environmental policy making; in the enforcement of regulations and laws, in the deliberate targeting of communities of color for toxic waste disposal and siting of polluting industries; in the official sanctioning of the life-threatening presence of poisons and pollutants in communities of color; and in the history of excluding people of color from mainstream environmental groups, decision making boards, commissions, and regulatory bodies. (Chavis 1993:3).

² Paraphrased from (Cable 1995:107) and (Capek 1993:8)
justice movement. Chapter 3 concludes the background portion of this thesis with a formal discussion of frames and their use, by social movements, in public controversies.
1. INTRODUCTION

Environmental controversies are public controversies. The media routinely reports on instances of groundwater contamination, and the threats of global warming and abandoned hazardous waste sites. Indeed, the frequency of such reporting has caused us to become accustomed to the regular cast of characters embroiled in yet another enduring predicament.

We have also become familiar with the predictable manner in which these controversies are played out in the public arena. Each side marshals its own distinguished panel of experts, the 'facts' of the case are presented, and each stakeholder attempts to advance their agenda and build support amongst the audience. The popular press provides the setting in which these dramas are acted, with the relative strength of the applause from the readership foreshadowing the ultimate fate of the antagonists.

On the surface, it would seem that the scientific nature of environmental disputes would make them amenable to fact-based appeals of objectivity. However, we have found that as we "try to address such apparently neutral questions of 'fact,' we rapidly slip into the morass of controversy" (Schön and Rein 1994:4). Reason ends up taking sides and history is replete with examples of controversies proving to be surprisingly resilient and able to withstand sustained appeals to facts. Accordingly, the environmental battlefield is littered with smoldering controversies, shattered platforms of past campaigns, and weathered troops reassembling for yet another offensive.

Often, however, disputes over facts hint at an underlying and fundamental differences in values and beliefs. From this perspective, controversies are not seen as disagreements over fact-based positions, but rather, as a result of conflicting interpretations of reality. This concept is elaborated by Schön and Rein:
We see policy positions (the use of fact) as resting on underlying structures of belief, perception and appreciation, which we will call “frames.” We see policy controversies as disputes in which the contending parties hold conflicting frames. Such disputes are resistant to resolution to appeal to facts or reasoned arguments because the parties’ conflicting frames determine what counts as fact and what arguments are taken to be relevant and compelling. (1994:4).

In this context, the preponderance of fact does not decide a case; rather, the dominant frame governs which facts are deemed worthy of consideration. The battle, therefore, is not over the question of right or wrong, but is instead focused upon maintaining frame dominance in the court of popular opinion. By gaining this tactical advantage, the sponsor of the dominant frame is in a position of power to control the terms of the debate, influence public sentiment and ultimately shape policy.

The social underpinning of environmental controversies leads to this drama being played out in the popular press, where the sponsors of each frame engage in a competition for supremacy. The sponsors of the dominant frame attempt to maintain their hold on power while challengers seek to create an opposing frame designed to shift the terms of the debate towards a more favorable arena. It is from within this context of competing frames that this thesis will investigate the dioxin debate and the influence of a particular challenger: the environmental justice movement.

Dioxin is a controversial chemical. There is an ongoing and vigorous debate surrounding the sources of dioxin, its reported health effects, and the need for regulation. The issue cuts across many traditional boundaries causing numerous stakeholders (including the chemical industry, academics, the regulatory community, Vietnam veterans and various environmental organizations) to join the fray. With the playing field crowded by the many participants, a predictable pattern has emerged as the competitors play out the controversy in the public arena. Each side has assembled its own distinguished panel of scientific experts, the facts of the case are presented, and each stakeholder attempts to advance its agenda while countering the offenses of its opponents. Indeed, as the former president of the Chemical
Manufacturers Association recently pointed out, the accepted strategy was to "...go find a study to put in the papers and try to bash each other" (Hirl in Hileman et al. 1994).

In an attempt to bypass the confrontational rhetoric, I will make use of frames to delve beneath the surficial differences of opinion and expose the underlying roots of the dioxin controversy. By doing so, I will demonstrate that the conflict surrounding dioxin, while appearing to be a fact-based debate over health and economic issues, may be rooted in a more fundamental disagreement over basic differences of values and belief. As such, the dioxin debate is essentially immune to fact-based resolution. The battle will, therefore, ultimately be won or lost depending on whichever frame manages a sustained dominance of public opinion.

Of late, the environmental justice movement has entered the fray, bringing it with it a reframing of the dioxin controversy. While scientific evidence is a component of their campaign, these 'facts' are used in light of the movement's overall theme of democracy, equity and social reform. From a framing perspective, therefore, the movement's goal is to challenge the dominant frame (which fosters the science-based discourse) and replace it with a frame rooted in democratic reform. The resulting shift in context would then give a tactical advantage to the environmental justice movement's interpretation of the dioxin controversy. In order to do accomplish this, however, the environmental justice movement needs a frame that will engender sufficient public support so that its goals may be realized.

In light of this discussion, the purpose of this thesis is to:

i. demonstrate that the dioxin controversy is a conflict between frames;
ii. examine how the frames have evolved over time and how each has shifted in response to the strategies implemented by its opponent; and,

iii. analyze, from a framing perspective, the strengths and weaknesses of the environmental justice movement's current campaign.

In attempting to determine the influence of the environmental justice movement, I have analyzed text from a variety of sources over several time periods. Given that environmental justice movement aims to challenge the status quo, I have examined the evolution of both the dominant, industry sponsored frame, and that of the challenging environmental justice frame. This was done by broadly examining text over three time periods (1960 - 1980; 1980 - 1990; and 1990 - 1995), the results of which can be found in the observation section, Chapter 4 through Chapter 6 respectively. It is in these three chapters where the various frames in the dioxin controversy are developed and traced through their evolution.

The analysis section begins with Chapter 7, where we discuss the result of this frame conflict by examining the relative strength of each frame and how it is portrayed in the mass media. Based upon this discussion, Chapter 8 analyzes the frame-based aspects of this controversy from a strategic perspective with Chapter 9 concluding this thesis.
2. THE DIOXIN CONTROVERSY

Of all the chemicals that have been tossed into the caldron of public anxiety, 2,3,7,8-tetrachlorodibenzo-p-dioxin, TCDD, has achieved the most notoriety and provoked the greatest fears for the longest period of time. (Hanson 1991:7)

As this quotation suggests, dioxin is at the center of a particularly potent public controversy. Accordingly, this chapter is dedicated to providing the reader with a brief history of the debate and discussing the key elements of this controversy. In addition, a significant force in the environmental justice movement, the Citizens Clearinghouse for Hazardous Waste, is introduced.

2.1 Background

At the outset, it is important to note that dioxin is not one chemical but many, as the term collectively refers to the congeners of chlorinated dibenzodioxins and dibenzofurans. Of these, 2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD (hereafter referred to as dioxin) is believed to be the most toxic. Dioxin is formed as a byproduct of industrial processes using chlorine, or when chlorine and organic matter are exposed to significant heat (as in burning or incineration). Dioxins have no commercial value.

The following section includes a brief history of the dioxin controversy followed by a more detailed discussion of the contemporary dioxin milestones.

2.1.1 Early History: 1872 - 1990

1872 Chlorinated dioxins are first synthesized by German chemists.

1948 2,4,5-trichlorophenol (2,4,5-T) is registered as a pesticide with the U.S. Department of Agriculture.

1957 Schultz identifies TCDD as the agent causing chloracne in workers manufacturing 2,4,5-T.

There are 75 congeners of chlorinated dibenzodioxins and 135 of dibenzofurans. Of these 210 compounds, seventeen exhibit dioxin-like toxicity.

1971 TCDD found to cause teratogenic responses in mice and rats.

1973 The US EPA considers canceling the registration of 2,4,5-T. Instead of canceling 2,4,5-T’s registration, the EPA yields to industry pressure and decides to perform further studies.

1977 Citizens in Oregon win suit against the US Forest Service to cease using 2,4,5-T.

1978 The US EPA announces that it is considering canceling all uses of pesticides manufactured from trichlorophenol.

1979 The US EPA suspends, on an emergency basis, all uses of 2,4,5-T and related herbicides.

1981 The Food and Drug Administration advises people not to eat fish containing 50 ppt or more of dioxin.

1982 To protect public health, the state and federal government purchase Times Beach, Missouri. Waste oil contaminated with dioxins had been applied to unpaved streets to keep dust down. Studies performed in 1974 revealed that the dioxin-contaminated waste oil was responsible for the sickness and death of horses and possibly accounted for illness in two children.

1983 Congress appropriates roughly $4 million for an EPA nationwide study of dioxin—the “National Dioxin Study.”

A Wisconsin study finds dioxin concentrations of 50 ppt in fish downstream from pulp and paper plants. The finding leads to the closing of a carp fishery by the Wisconsin Department of
Natural Resources. No direct link is made to pulp and paper mills, but the mills are the suspected source.

1984 EPA begins making recommendations that dioxin should be removed from the nations waterways. EPA was quoted as saying that 'not enough data are available concerning the effects' of TCDD to establish national water quality criteria for the protection of aquatic life. "To protect humans from the cancer-causing effects incurred from drinking water or eating fish or other aquatic life containing dioxin, 'the ambient water concentration should be zero, based on the non-threshold assumption for this chemical,' the agency said." "However, EPA added that the 'zero level may not be attainable at the present time,' and states may allow low concentrations 'representing different risk levels' in establishing water quality standards for TCDD."

1985 In 1985, EPA issued its first dioxin risk assessment. This study focused primarily upon cancer in controlled animal studies and indicated that dioxin was a probable, highly potent human carcinogen.

1987 After passage of the 1987 Clean Water Act Amendments, states started setting water quality standards for dioxin in pulp and paper mill effluent. By 1992, 42 standards had been adopted (spanning 4 orders of magnitude), with 39 approved by the US EPA.

1988 The US EPA and the American Paper Institute signed an agreement to begin a joint study of all -- 104 -- chlorine bleach mills for dioxins and furans in effluents, sludges, and pulp. EPA begins its first reassessment of dioxin.
2.1.2 Recent History: 1990 - Present

In 1991, Greenpeace published a report entitled "The Product is the Poison - The Case for a Chlorine Phase-out" (Greenpeace 1991). In it, the authors argued that dioxin and other similar chemicals pose an unreasonable health risk and that their production must be halted by a phase-out of the industrial production of chlorine.

In 1992, the International Joint Commission (IJC), in their Sixth Biennial Report, offered a similar strategy to manage the problems associated with dioxin and dioxin-like chemicals in the Great Lakes region:

The Commission recommends that the Parties adopt and apply a weight-of-evidence approach to the identification and virtual elimination of persistent toxic substances...alter production processes and feedstock chemicals so that dioxin...no longer results as byproducts (and)...develop timetables to sunset the use of chlorine and chlorine-containing compounds as industrial feedstocks. (IJC 1992:57)

While initially dismissing Greenpeace's recommendations, the entrance of the IJC essentially caught chemical manufacturers off guard. As a result of these declarations, one from a radical environmental organization and the other from a quasi-governmental institution, the dioxin debate rapidly expanded into a heated controversy over chlorine.

Chlorine is one of the building blocks of dioxin and without it, the creation of dioxin would not be possible. Chlorine chemistry, however, forms the cornerstone of current industrial technologies. Chlorine and chlorinated compounds are integral components in virtually all U.S. drinking water systems, pharmaceuticals and pesticides. In addition, chlorine chemistry is a fundamental component of many plastics: products upon which our society currently depends. The issue essentially distills down to one of money, with some estimates putting the annual value of chlorine to the American economy in the range of $90 billion. (Charles River Associates 1993).

In response to what they viewed as anti-chlorine sentiment, industry quickly began repairing what it deemed as an environmental public relations
crisis. Through the Chlorine Chemistry Council (CCC), a Washington D.C.-based arm of the Chemical Manufacturers Association, the chemical industry began attempting to influence the outcome of the dioxin/chlorine debate. In order to combat calls for a chlorine phase-out, CCC members increased its 1994 budget to $12 million, up from $2 million in 1992. The CCC is currently active in all aspects of the controversy, including the sponsorship of toxicological and epidemiological research programs, citizen outreach and lobbying. The CCC’s main position is one which believes that chlorine phase-outs and bans are “neither scientifically justified nor a socially responsible policy” (Hileman 1993). It is also CCC’s goal to keep the inquiry rooted in ‘sound science’ and “… not to let anecdotal evidence drive policy” (Hileman 1996).

In 1994, in response to the mounting concerns over chlorine and dioxin, the EPA recommended a study to develop a strategy to prohibit, reduce or find substitutes for the use of chlorine and chlorinated compounds. This study was recommended as part of the re-authorization efforts for the Clean Water Act. The severity of this threat resonated throughout industry and the executive director of the Vinyl Institute characterized EPA’s action as a “declaration of war on modern society” (Hirl in Chemical Week 1995).

In 1994, EPA also published its draft dioxin reassessment. This reassessment was scheduled to be complete two years earlier, but the contentious nature of the debate caused EPA to take a more cautious approach in crafting the document. In the reassessment, dioxin was reaffirmed as a probable human carcinogen. The report also presented new evidence that dioxins, even in trace amounts, may cause a wide range of adverse human health effects, including disruption of regulatory hormones, reproductive and immune disorders, and abnormal fetal development.

Rather than calm the ongoing debate, the report was seen as adding fuel to the fire. Industry groups chastised EPA for being alarmist and relying on overly speculative assumptions while environmental advocates were
critical of the agency hedging its recommendations by introducing "language of uncertainty and doubt." As one scientist put it, "This is going to be one of the most important public debates on environmental chemistry ever" (Gallo 1994).

EPA's 1994 findings created great controversy and the agency received thousands of pages of comments, studies and opinions in response to its reassessment. Based upon the comments, EPA began formally revising the document in early 1995. A final version of the risk assessment is expected in late 1996 or 1997.

2.1.3 Major Elements of the Debate

The public controversy essentially boils down to two issues: the debate over potential health effects of dioxins and related compounds; and, the costs of the associated regulatory policy.

From the health perspective, there is growing concern that dioxins may be responsible for a wide range of cancer and non-cancer effects. Acting as potential disrupters of human hormones, dioxins and other synthetic chemicals may be linked to declining sperm counts, genital deformities, hormonally triggered cancers, neurological disorders and other deleterious effects (Hileman 1996). While this in and of itself may be significant, "the pivotal issue is thus whether adverse human health effects can reasonably be expected to occur at or near current background body burdens" (ES&T 1995:31A).

The potential ramifications of this issue are huge. If dioxins and other industrial chemicals are found to pose significant risks; and if these synthetic chemicals are already found at concentrations sufficient to bring about these health effects, then it may indeed be logical to consider broad based policies aimed at preventing releases of organochlorines into the environment. However, given that these releases have resulted from standard industrial
operating practices, it is feared by some that the costs associated with regulation may be significant.

The battle lines are, therefore, clearly drawn. The policy stakes are high, and as such, many believe that the final outcome of this debate will have precedence setting implications for environmental policy in general.

The dioxin controversy is a very public battle in which industry (who is attempting maintain the status quo) can be seen as being pitted against an activist environmental community eager to effect reform. While many segments of the environmental movement are concerned about dioxin, it is the environmental justice movement which is the most active participant in the debate. As such, we now turn our attention to the environmental justice movement and its dioxin-based efforts.

While the proponents of environmental justice are separate and distinct from the more mainstream environmental organizations, there is still somewhat of a variation within the movement with regards to strategies, tactics and ideology. As such, a blanket discussion of the environmental justice movement would be overly ambitious and too broad to be accurate. This thesis, therefore, will concern itself with one particular participant in the environmental justice movement, the Citizen’s Clearinghouse for Hazardous Waste and their Stop Dioxin Exposure Campaign.

2.2 The Citizens Clearinghouse for Hazardous Waste

The Citizens Clearinghouse for Hazardous Waste (CCHW) is an environmental justice organization dedicated to “helping people win cleanup of contaminated sites and to prevent new sources of contamination” (Everyone’s Backyard 1994). CCHW was founded in 1981 by Lois Gibbs, the former President of the Love Canal Homeowners Association. CCHW provides information and assistance to local environmental justice organizations and to date, has worked with over 8,000 community based groups nationwide (Gibbs 1995:xxviii).
CCHW was born out of the perception that environmental injustices are the result of "greedy corporate polluters and their friends in government" (CCHW, 1986a:4). As such, their early campaigns were of the Not In My Back Yard (NIMBY) variety. With time, however, the movement became increasingly sophisticated and began focusing its efforts on pollution prevention strategies, one of which is CCHW's Stop Dioxin Exposure Campaign.

2.2.1 The Campaign

After a series of conferences and planning sessions dating back to 1991, CCHW launched the Stop Dioxin Exposure Campaign in 1994, the goal of which is "...a sustainable society in which there is no dioxin in our food or breast milk because there is no dioxin formation, discharge or exposure" (Gibbs 1995:xix).

To accomplish this objective, CCHW aims, among other things, to halt all forms of incineration, phase out the industrial uses of chlorine, and promote safe, alternative jobs, products and technologies (ibid. xx).

The fundamentals of the Stop Dioxin Exposure Campaign are outlined in Dying From Dioxin, a recent publication from CCHW. In this book, the authors provide the scientific background of the dioxin issue as well as strategies and tactics for organizing local and regional support designed to eliminate dioxin exposure.

To accomplish their goals, CCHW's strategy is dependent upon their ability to:

i. Build coalitions.

ii. Educate the American people about dioxin and about how to stop dioxin exposure.

iii. Keep involved communities connected.
iv. Work together with labor.

v. Oppose all incineration, especially medical waste incineration.

vi. Convince governments, institutions, and consumers to buy only products that don’t add to the dioxin levels in our food and our bodies.


CCHW is currently emerging out of the promotion phase of its Stop Dioxin Exposure Campaign and into a more mature, action-oriented agenda. A national book tour has been underway for several months and the Third Citizen’s Conference on Dioxin was recently held in Baton Rouge, Louisiana. At this conference, subtitled “A Time For Action,” CCHW and the Stop Dioxin Exposure Campaign began its move away from simply raising dioxin awareness to focusing more on what average citizens can do to rid their communities of dioxin hazards.

2.3 Chapter Summary

In this chapter, we have discussed the major milestones in the dioxin controversy and have outlined some of the significant platforms in the dispute. We have also introduced a leading member of the environmental justice movement, CCHW, and have briefly described the major elements of their Stop Dioxin Exposure Campaign.

As with any social movement undertaking, the fate of the Stop Dioxin Exposure Campaign is uncertain. One thing that is known, however, is that the success of the campaign hinges upon CCHW’s ability to raise public awareness of the issue and to elicit sustained, popular support. This process is not as straightforward as simply creating a message and making sure that it is heard. Rather, complex forces weigh in on the success or failure of such an undertaking.
Using the concept of frames, we will now begin to analyze the social forces governing the success of CCHW's Stop Dioxin Exposure Campaign. Accordingly, the following chapter formally introduces the theory behind frames and describes their use by social movements in shaping both public opinion and public policy.
3. FRAMES AND SOCIAL MOVEMENTS

3.1 Introduction

The environmental justice movement is a social movement; as such, it competes for attention (and power) in the sphere of public opinion. Public support not only sustains the movement but is also the vehicle through which reforms in policy are effected. In this chapter we will discuss the theoretical aspects of frames and how they are used by social movements to create popular support and to promote change. We will also discuss the factors that influence the relative success of individual frames in a public controversy. The purpose of this chapter is to set the theoretical context of frames for the subsequent analysis of their influence on the dioxin debate.

3.2 Frames

3.2.1 Definition

The term frame is borrowed from Goffman (1974:21) to denote "schemata of interpretation" that enable individuals to "locate, perceive, identify, and label" occurrences within their life space and the world at large. By rendering these life experiences as meaningful and legitimate, frames "function to organize experience and guide action" and essentially serve as lenses through which we view, make sense of and decide how to act in our world (Snow, et al. 1986).

Frames, however, are not to be confused with positions, for within each frame, there is ample room for conflicting positions on certain issues. In addition, it is important to note that there is no manner in which one can falsify a frame. The reason being is that there is no way of making sense of reality except through the use of a frame. There is no such thing as an objective observer, everybody brings their perceptions to the table. Accordingly, those who construct their own version of reality through one
particular frame are at liberty to discount or reinterpret the ‘facts’ that proponents of an opposing frame present as counterevidence to the first (Schön and Rein 1994).

3.2.2 Frames and Their Role in Social Movements

Language is a political tool, employed by interest groups to gain tactical advantage (Hilgartner 1985:26).

Social movements arise because a perceived problem needs fixing. Problems, however, are not ‘given’ but are socially constructed (through the use of frames) by humans in an attempt to make sense of complex and troubling situations. From a social movement perspective, the definition of a problem is a strategic exercise in framing, designed to call in reinforcements for one’s own side in a conflict. Since it is always the weaker side who requires help, strategic problem definition usually means “portraying a problem so that one’s favored course of action appears to be in the public interest, or natural, or necessary, or morally correct” (Stone 1988:171).

For a social movement to survive, “it must be able to generate support among authorities, sympathy among bystanders and, most importantly, an ongoing sense of legitimacy and efficacy among movement cadre and members” (McAdam et al. 1988:722). As this quotation suggests, creating an effective message is critical to the life of a social movement. Social movements, therefore, use frames as tools to influence “which perspectives are judged legitimate or valid, what solutions are seen as reasonable, and what type of information is seen as useful or relevant” (Vaughan 1993:119). The use of metaphors in creating a frame is also, in and of itself, an important strategic undertaking. On the surface, metaphors simply draw a comparison between one thing and another, but in a more subtle way, they imply a prescription for action. As such, how one chooses to describe the problem governs the appropriate course of action that must be taken towards the preferred solution.
The ultimate goal of a social movement is fundamental change. While creating an appealing frame is necessary to gain popular support, success requires that the dominant frame be replaced or be sufficiently altered by the encroachment of the challenger frame. This competition for dominance is a public process, carried out in various forums. A forum includes a site or arena in which meaning is contested in front of an active audience or gallery.

The mass media are the most important forum of public discourse. First, media discourse is assumed by decision makers to be especially important or influential (whether justified or not); hence, it becomes the major site in which contests over meaning must succeed politically. Secondly, social movement actors are often interested both in cultural changes that are reflected in society as well as influencing political decision makers. Media discourse is central as both an indicator of cultural change and as the most influential forum for overall cultural impact (Gamson 1983).

Various individual and collective actors engage in active efforts to promote their particular frame in public discourse. They act as sponsors attempting to further the career or fate of their preferred package. By collective actors, we include official, political parties, interest groups, advocacy networks and social movements.

3.2.3 Summary

In a capsulated and simplified fashion, the role of frames (and their sponsors) in a public controversy is as follows:

i. At the outset, there exists a dominant frame. No challengers are on the horizon, and as such, no controversy is seen to exist.

ii. Over time, however, a challenger group emerges due to some perceived wrong or injustice. The challenger group approaches the existing circumstance with a different frame than that shared by the dominant actors. Accordingly, the challenger defines the problem
and re-interprets the facts in light of its own framing of the issues. The conflict between the existing dominant frame and the frame held by the challenger is what defines the controversy.

iii. Given the public nature of the controversy, the challenger realizes that in order to force action, they must foster sufficient public support. As such, they launch their challenger frame into the public discourse (mass media) in an attempt to sway public opinion and effect the necessary change. The challenger frame carries its own, unique interpretation of the status quo, and the proposed solutions (through the use of metaphor), which appear to be in the public’s best interests.

iv. Quite often, however, the challenger frame fails to make any significant impact, and the controversy passes. At other times, however, the controversy intensifies as the dominant frame sees its power base threatened and chooses to counter the challenger frame.

v. A pitched and very public battle then ensues, with the sponsors of each frame vying for the dominant position in the forum of public opinion.

The bottom line, however, has everything to do with emerging victorious from this battle. As such, it is vital to encourage sustained, popular support and alignment with one’s preferred frame. This process is the focus of the following section.

3.3 Frames and Movement Participation

3.3.1 Introduction

Environmental deterioration does not automatically translate into collective action. New (legitimate) discourses have to be created, and the public mobilized to support these alternatives (Brulle 1996:80).
In order for things to change, the truth has to be understood by a large group of people who then use this knowledge to fuel their efforts to win justice (Gibbs 1995:143).

These two quotations, one from a sociologist rooted in academia, and the other from an environmental justice organization, bear striking similarities. Apart from simply creating a message, both statements point to the importance of mobilizing support to sustain a social movement. Accordingly, this section will look at the process by which individuals come to join particular social movements and the ways in which these movements attract individual membership.

3.3.2 Frame Alignment

The general tendency of citizens to accept the status quo and refrain from political action is a documented phenomenon (Edelman, 1964 and 1988). In addition, it is widely recognized that generating sustained and effective mobilization of citizens is fragile and easily deflected (Woliver 1995). In spite of these obstacles, however, the public continues to participate in reform-oriented social movements.

There are multiple schools of thought on social movements, each of which offer theories as to why individuals join a particular movement over another. From the social psychological perspective, for a person to join a social movement, there must be a degree of consistency between the individual’s frame and the one being offered by the social movement. Borrowing from Snow et al. (1986), this section outlines the four distinct frame alignment processes by which social movement organizations and individuals link interpretive orientations.

3.3.2.1 Frame Bridging

The process of frame bridging involves the physical linking of two or more “ideologically congruent but strictly unconnected frames on a particular issue or problem” (ibid:464). The distinction here is that the target participants are willing to support the social movement organization’s goals (as defined by
the existing frame) and share its objectives, it is just that they lack a structural relationship enabling participation. A social movement organization reaching out to "unmobilized sentiment pools" through direct and electronic mail, networking or other targeted means would be an example of this process.

Evidence of frame bridging abounds in social movements. From the National Rifle Association to the Christian Right, from Greenpeace to the Citizens Clearinghouse for Hazardous Waste, all rely heavily upon frame bridging to attract membership and capture latent support. In particular, a recent direct mail appeal from CCHW stated that 56% of Americans view themselves as supportive of environmental causes but are not involved in a movement or campaign.

The challenge is to build a Monumental Movement by engaging members of the 56% of the American people who describe themselves as sympathetic but not active (CCHW 1996).

3.3.2.2 Frame Amplification

Over time, frames may become tired and stale. In addition, the meaning of events and their direct connection to one's immediate being are often shrouded by uncertainty, indifference, and deception or fabrication by sponsors of competing frames. As such, support for and participation in movement objectives is often contingent on the clarification and invigoration of an existing frame (Snow et al. 1986:469).

Value amplification, one particular variety of frame amplification, targets one or more values that are basic to prospective constituents but have not yet inspired collective action. These values may have atrophied with time, become taken-for-granted or their relevance to a particular issue may be ambiguous. A popular example of value amplification is the 'Family Values' agenda of the Republican Party in the national elections of 1994. In the environmental justice movement, the framing of the debate in terms of the infallible principles of equity and democracy are techniques of value amplification.
..your (dioxin) campaign should evoke the public's finest affections for the promise of democracy. Think of the Statue of Liberty. (Gibbs 1995:156-157).

3.3.2.3 Frame Extension

Frame extension calls for the broadening of the boundaries of a primary frame to "encompass incidental points of view or that are of little consequence to its primary objective but of considerable salience to potential adherents" (Snow et al. 1986:472). In essence, the movement is attempting to build support by portraying its objectives as being congruent with the values and interests of potential members.

During the 1980's, the mainstream environmental movement suffered a withering of support for its cause due to its inability to become a truly inclusive movement (Dowie 1995; Szasz 1994; and Gottlieb 1993). Minorities and the economically marginal constituents could not sufficiently relate to the middle middle-class values of saving wild space and blue whales. This result can be attributed to mainstream movement's failure in frame extension.

In the dioxin campaign, the environmental justice movement uses frame extension to elicit membership support. Evolving from the localized NIMBY strategies, the Stop Dioxin Exposure Campaign is attempting to reach out to a much broader audience. "Activists in East Liverpool, Ohio need to shut down that incinerator to protect not only themselves, but also the families in Canton, North Carolina" (Gibbs 1995:xviii).

While appealing to a broad geographical base is strategically important, of greater concern to the movement is maintaining a broad and diverse cultural base. At issue for the environmental justice movement, however, was how to effectively reach into communities of color. One of the triggering events that lead to the convergence between the grassroots environmental, and civil rights movements began in 1982, in Warren County, a predominantly African-American community in North Carolina.
The Warren County campaign centered around a plan by the state to create a local landfill as the repository for PCB contaminated. The protesters, however, viewed this as the latest undesirable land use slated for their county. As a result, residents of Warren County engaged in civil disobedience and other familiar tactics and though they were not able to block construction of the landfill, they attracted the attention and participation of prominent church and civil rights leaders.

At the urging of the Warren County protesters, the United Church of Christ’s commission for Racial Justice undertook a national study on the issue of race and toxic waste. What they found was that the racial composition of the host community was the strongest predictor of hazardous waste site location (UCC 1987). As a result of this report and the growing awareness of the race-based siting practices of industry, the First National People of Color Environmental Leadership Summit took place in Washington, D.C. in 1991. According to Edwards:

Framing the siting and exposure issues as a new form of racism proved to be a stroke of genius. Almost overnight environmentalism became accessible to wide segments of the African American community, churches and civil rights organizations. Quickly, traditional civil rights and social justice frameworks were extended to included environmental concerns. (1995:42).

This inclusion of environmental concerns with traditional civil rights struggles is an example of frame extension and was a significant event in the evolution of the broad based environmental justice movement.

3.3.2.4 Frame Transformation

On some occasions, frames that are advanced by social movement organizations may fail to sufficiently resonate with the populace. In this case, “new values may have to be planted and nurtured, old meanings or understanding jettisoned, and erroneous beliefs or ‘misframings’ reframed in order to gather support and secure participants” (Snow et al. 1986:473). This process defines frame transformation, the most fundamental of all frame alignment processes.
Within this interpretive change are two analytically distinct phenomenon. First, there is a change in the perceived seriousness of the condition such that what was once thought of as unfortunate but tolerable is now inexcusable and unjust. Secondly, there must be a corresponding shift in "attributional orientation" or blame, from which action is directed.

The transformation process can be both domain specific or global in nature. In domain transformations, an isolated frame previously taken for granted is reframed as problematic and in need of repair. An example of this would be when Mothers Against Drunk Drivers reframed the loss of loved ones as a gross injustice that demanded an increase in the severity and certainty of penalties for drunk driving.

With respect to the environmental justice movement, one of the principal domain transformations revolves around the issue of rights and responsibilities. The dominant frame is one that views environmental pollution as a necessary byproduct of our industrialized society. Using frame transformation, the environmental justice movement seeks to challenge this tenet by questioning the very nature of the system that allows this perceived injustice to continue.

The dioxin story highlights key conflicts between the forces that govern our society. It is a test case for who should control decisions about production. It is a focal point for questions concerning the power of multinational corporations to produce what they will versus the individual's rights to freedom from harm. It is no less than a test case for who owns America (Greene and Ratner 1995).

In global transformations, this change is sufficiently broadened such that the new framework gains ascendance over others as a kind of master frame that influences all subsequent lifeworld interpretations. This is a fundamental transformation, bordering on religious conversion, with the result that "everything is seen with greater clarity and certainty" (Snow et al. 1986:475). Examples of this individual transformation are abundant among participants in the environmental justice movement:

All described how the process of participation changed them in every way. It transformed their understanding of the world. It changed their self image, and
in effect, totally changed how they defined their lives...They think of themselves as hardly being the same person they were before it all began (Szasz 1994:154).

3.3.3 Impediments to Movement Success

However, even if a culturally resonant message is constructed and widely disseminated throughout the community, there are substantial impediments hindering individual participation and overall movement success. For the purposes of this discussion, these impediments can be classified as institutional and individual impediments.

3.3.3.1 Institutional Impediments

Returning to the nature of the message or goal offered by a social movement organization, Hilgartner’s hypothesis governing movement success is centered around the societal restrictions governing message dissemination and reception. In beginning his discussion, Hilgartner echoes the social constructionist themes of the previous sections. As such, he defines a social problem not as one that is based upon objective fact, but rather, as a condition or situation that is labeled a problem in the arenas of public discourse and action. This being the case, macro impediments are rooted in the fact that public attention is a scarce resource, and that there are many potential problems all competing for recognition and popular support (Hilgartner 1988:53).

At the outset, it is important to note that there is a huge population of latent problems. Only a small fraction of these potential problems ever make it to ‘celebrity’ status defined as the dominant topics of political and social discourse. The vast majority remain on the outside of public consciousness. In light of the importance to social movements of ‘getting the message out,’ this section will briefly discuss these impediments.

3.3.3.1.1 Competing Definitions

Since there are many ways of defining a particular situation, claims about social problems do not only call attention to the existence of...
troublesome conditions, they also frame the problems (and implied action-oriented solutions) in particular ways. For example, as Gusfield (1981) points out, the highway deaths associated with alcohol consumption can be seen as a problem of irresponsible drunken drivers, insufficient automobile crash worthiness, a transportation system overly dependent upon automobiles, poor highway design, excessive emphasis upon drinking in adult social life, or any combination of the above definitions. Statements about social problems thus select a specific interpretation of reality from a plurality of possibilities.

Competition among social problems thus occurs simultaneously on two fronts. Using the drinking and driving example, within each substantive area (alcohol related deaths), different ways of defining the situation compete to be accepted as the authoritative version of reality. This competition implies an internal struggle amongst those aligned with the overall frame (drunk driving deaths should be avoided), thus diffusing the participants and weakening the overall movement. Second, a large and diffuse collection of problems simultaneously compete with one another for public attention, and the privilege of both entering and remaining on the public agenda.

3.3.3.1.2 Carrying Capacities

The nature of problem formation also plays a prominent role in restricting the rise of a potential social problem. As we have discussed, discourse takes place within arenas (media, professional societies, neighborhood organizations, etc.) It is in these institutions that social problems are selected, defined, dramatized, prepared and presented for public consumption. These institutions, however, have finite resources (column space, prime time) such that only a small number of potential problems ever get discussed or addressed.

Carrying capacity limitations also occur on the individual level, as members of the public are limited not only by the amount of time and money
they can devote to social issues, but also by the amount of "surplus compassion" for concerns that are of less personal significance.

3.3.3.1.3 Principles of Selection

On a more pragmatic front, there also exist a set of selection principles that influence which problem definitions are most likely to be addressed in the aforementioned arenas. Drama plays a role in that the more persuasive and moving a problem is structured, the more likely it will get attention. Novelty is another important consideration, for the social problem has to be kept from going stale in the public arena. At the same time, however, careful attention needs to be paid so as not to flood the public arenas with a sustained bombardment of messages about similar problems. This can lead to trivialization and a rapid decrease in issue salience which may cause members of the public to concluded that "Life Causes Cancer."

3.3.3.2 Individual Impediments

For those considering participating in a social movement, the very act of joining a grassroots group labels one as being outside of the traditional system; as such, individual participants are vulnerable to scrutiny and stigmatization by peers. Alexis de Tocqueville once noted that people fear this isolation more than they fear being in error. This potential for stigmatization is further exacerbated by the nature of environmental controversies. Given the traditional notion that government officials are objective and unbiased in fulfilling their duties,

...the imprimatur of impartiality and professionalism in political controversies often serves to legitimize the position of those who favor the status quo and to label dissenters as emotional, angry and subjective (Woliver 1995:1).

The combined effects of peer pressure, stigmatization, dismissal and the threat of isolation can drive citizens into what Woliver describes as a "spiral of silence" (ibid. 8).

Today it can be proved that even when people see plainly that something is wrong, they will keep quiet if public opinion (opinions and behavior that can be
exhibited in public without fear of isolation) and, hence, the consensus as to what constitutes good taste and the morally correct opinion speaks against them (Noelle-Neuman 1984:ix).

This quote gets to the heart of the matter surrounding campaigns for community-driven reform. Initially, grassroots groups expect to be on the fringes of popular opinion, for they view the status quo as illegitimate. Were they to be in the mainstream, they would, by default, be part of the problem. Their mission, therefore, is not to win an early popularity contest or to accomplish what can be achieved given the current situation. What the grassroots are striving for, instead, is to change the politically reality to reflect the needs and concerns of the people who are ultimately affected by policy decisions.

3.3.4 Frame Contests

The preceding section discussed personal and institutional hurdles that impinge upon a social movement’s influence ability to influence public opinion. Generally speaking, these impediments are an inherent component of public discourse and frame alignment, and are worthy of consideration by challengers in promoting their adopted frames. Sponsors of the dominant frame, however, also take measures to resist the advances of challengers.

Recall that frame sponsors, through the use of metaphors, define a situation and suggest a preferred solution. These mobilizing frames are what social movements use to challenge the status quo. In reply, sponsors of the dominant frame launch demobilizing frames to counteract challenger action. Members of the environmental justice movement, as part of their mobilizing frame, urge action (ban on incineration, phase-out of chlorine, etc.) to halt the production of dioxin. Industry responds with a demobilizing frame by suggesting that it is reasonable and prudent to ‘look before we leap’ and call for additional research and caution prior to taking any drastic action.

This competition among frames is an important aspect of social discourse. Further discussion of the use of frames to oppose unwanted action
will follow in subsequent chapters as we more fully investigate the dioxin-related discourse.

3.4 Chapter Summary

In this chapter, we introduced the concept of frames and discussed their role in issue creation. We also examined the phenomenon of public discourse and investigated the process by which frames compete in an attempt to sway public opinion and effect policy. Social movements require broad public support in order to further their goals. As such, they make use of frame and metaphor to "...portray issues deliberately in certain ways so as to win the allegiance of large numbers of people who agree (tacitly) to let the portrait speak for them" (Stone 1988:171).

This concludes the background section of this thesis. Having thus set the theoretical foundation for this research, we will now move forward and more fully examine the frame competition that is the dioxin controversy.
PART II - OBSERVATIONS

Introduction

Up to this point we have discussed the dioxin controversy and introduced the concept of frames and their use, by sponsors, to advance a given agenda. We will now combine these concepts in order to investigate the influence of the environmental justice movement on the dioxin controversy.

While there are several participants (and frames) contributing to the dioxin debate, this analysis focuses upon the two major frames: the dominant, industry-sponsored frame and the challenger frame backed by the environmental justice movement.

Methodology

The time span for this investigation is approximately thirty-five years and consists of three phases: 1960 to 1980: Pre-Environmental Justice; 1980 to 1990: Emergence of Environmental Justice; and, 1990 to 1995: Contemporary Environmental Justice (Chapter 4 through Chapter 6 respectively). By categorizing the analysis in this manner, we are able to see (through the use of a series of signature matrices) the evolution of the key frames in the debate. The pattern for this analysis and observation is straightforward. For each time period, we will examine the principle dioxin-related frames in public discourse complete with samples of relevant text.

There are inherent difficulties in conducting such a survey as this. In order to provide some consistency in frame development, I tended to limit my investigation to representative publications that provided a broad survey of sponsor opinions on certain issues. For the development of the industry-sponsored frame, I focused on the editorial pages of Chemical and Engineering News (C&EN). In addition, some selected articles from this and related journals were also employed when more detailed information was required.
The development of the environmental frame was more difficult in that the movement is dynamic, broad and diffuse; as such, there is not one cohesive, readily available publication from which to extract relevant text. I, therefore, gathered my data from a variety of sources, while focusing my research on CCHW publications and newsletters from similar organizations.

Throughout my textual research, I was confronted with extreme positions on all sides of the issue. Some industry advocates questioned whether or not there were any health effects from industrial chemicals while some members of the environmental movement advocated an immediate end to our current industrial society. In an attempt to give a balanced account of the respective frames, the more extreme positions were, therefore, excluded.

It is, however, difficult (if not impossible) to objectively describe a frame. We all carry our own frames with us, and they influence how we view our world. Therefore, in describing the two frames embroiled in the dioxin controversy, I do so in light of my own limitations and opinions. My bias is towards a cleaner, safer and more equitable society, and my tendency is to favor the principles and positions of the environmental justice frame.

In an attempt to correct for these biases, I will describe each frame as if I were its proponent. By doing so, I intend to keep the description and subsequent analysis as neutral as possible.

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This section is intended to set the “before” stage of the analysis, prior to the formal emergence of environmental justice onto the contemporary scene. During this time period, the environmental justice movement was a scattered and disparate collection of isolated activists. During the 1960s and 1970s, dioxin was not a significant component of the popular environmental dialogue, as the debate largely focused on the broader issue of industrial chemicals and products. Realizing this limitation, I will, nevertheless, use the over-arching debate surrounding pesticides and the effects of toxic chemicals as a surrogate issue in my analysis. Although Love Canal began to emerge on the scene in 1978, the year 1980 was chosen as the cutoff for this “pre-environmental justice” analysis. This is an arbitrary decision which I believe holds little consequence to my overall analysis.

4.1 Industry Frame

Following the publication of Silent Spring, ecological matters were opened up to public scrutiny, and industry’s free reign was being corralled.

Manipulation of the environments is no longer the private preserve of individual polluters, who have pretty much enjoyed carte blanche and zero accountability (McCurdy 1972).

Up to this point, industry was not accustomed to having to defend its practices or products. Their chosen tactic, therefore, was to come out fighting.

4.1.1 Health Risks

Industry advocates portrayed the health risks of chemicals as unavoidable and part of life’s everyday hazards:

Every schoolchild can come up with a list of common, household products that cause cancer: the saccharin in a soft drink, the nitrates in a hot dog...Unfortunately, it now appears that, under the “right” circumstances, any substance that can excite a cell physically can start cancerous growth. Or as a new bumper sticker puts it: Life Causes Cancer. (Forbes 1979:34)
The magnitude of the health risk is also an issue that is addressed, with industry advocates presenting the risk as minimal. Given the minute quantities of hazardous chemicals in the environment, there is also an implicit assumption that if the dose is small, so is the risk.

4.1.2 Economic Risks

From an economic stance, industry advocates seek to link the regulation or control of chemicals to a marked decrease in the nation's economic prosperity. They present the threat of increased regulation as significant, resulting in higher prices, lower wages, unemployment and stunted economic growth.

The costs of improving the environment will impinge upon economic growth, employment opportunities and industrial development (Kiefer 1970).

More aggressive advocates saw the attack on chemicals as leading towards:

[t]he end of all human progress, reversion to a passive social state devoid of technology, scientific medicine, agriculture, sanitation or education (Darby 1962).

The voice of rationality must be heard or irreparable damage will be done to the economy and the public welfare (Simon 1971).

4.1.3 Decision Making

Given the rise of public scrutiny, "Industry must realize that society is now formulating a new set of rules" (McCurdy 1970). As such, they sought to play an active role in the publicly formulated policies that were to shape their trade. Industry advocates, therefore, began attempts at defining the basis for the policy process by promoting cost benefit analysis.

In such areas a unemployment versus inflation or a cleaner environment versus higher productivity, there must always be tradeoffs (Barker 1978).

Any harm that is caused by the use of pesticides is greatly overcompensated by the good that they do (Brinkley 1962).

In addition to defining the rules by which decisions were to be made, industry also desired an active role in the decision-making process itself:
A solution will be found; its fairness depends upon our constructive participation (St. Clair 1978).

4.1.4 Calls For Action

Given the charges of industry's questionable record in managing industrial chemicals, increasing calls for legislation were being made. In response, industry advocates pointed towards their own, superior ability to police and control their policies as an attempt to deflect this perceived affront to their sovereignty:

The generator should be free to decide whether to treat or dispose of wastes (Manufacturing Chemists Association in EPA 1976:565).

...methods of controlling risk in their handling are known and are being improved (Kenyon 1962).

...we are qualified to provide leadership in the realm of public issues by the way we mange our businesses (Barker 1978)

Additional strategies included sharing the responsibility of environmental pollution with the general populace as a means of diluting the issue:

...industry is merely an extension of the individual. Those who use industrial products must share in any responsibility for their ill effects (McCurdy 1970).

This discussion, however, took place behind the need to fully understand the magnitude of the problem prior to action:

...it follows that no major economic action should be undertaken until there is objective evidence that a given substance is harmful and even then the action should be in proportion to the potential harm (Simon 1971).

4.1.5 Summary of Industry Frame

With respect to the broad issue of environmental risks, industry advocates moved to:

i. minimize the nature and nature of the risk;

ii. emphasize the widespread benefits inherent in technological progress;

iii. remind the public that tradeoffs (economic decline) were a significant part of any move to restrain industrial operations;
iv. frame the debate in a scientific context, with decisions arising from a rational cost-benefit analysis;

v. lobby for industry’s involvement in the decision making process;

vi. counter attempts at regulation by promoting industry’s role as a cooperative and responsible citizen; and,

vii. characterize the environmentally concerned public as misinformed, lacking common sense, irrational and emotional.

4.2 Environmental Justice Frame

The publication of *Silent Spring* and the media event that was Earth Day proved to be catalysts for environmental advocates. The former provided factual inspiration for the creation of a movement and the latter offered an opportunity to champion reform to a wide audience. Environmental advocates, therefore, attempted to counter industry positions by focusing on the damage that past and current industry practices inflicted upon an unsuspecting nation.

Throughout the 1940s and 1950s, DDT and other chemicals were enjoying widespread use and support for their pest control capabilities. However, with Rachel Carson’s publication of *Silent Spring* in 1962, man became aware that he had “contaminated, to a demonstrable degree, the entire land, air, and water masses of his globe, his food supply, and indeed his own flesh, with a chemical of his own manufacture” (Lowrance 1976:162). In addition, the revelations of Carson and Commoner demonstrated that industrial activity pollutes “the ordinary environment everywhere” thereby threatening not only the quality of human life but human health as well.

In concert with this new realization, 1970 saw the first Earth Day, and with it, the emergence of the mainstream environmental movement. As a result, a new constituency of middle class activists became “alarmed, angered and aroused” (Dowie 1995:23).
4.2.1 Health Risks

Those promoting the environmental agenda look to the broad threats imposed by chemicals to human and ecosystem health. Environmental advocates warn of “massive kills of wildlife and beneficial insects” as well as alluding to an increase in human deaths due to chemical exposure (Wodka 1976). Attention is also paid to the effects of low level exposure and that ambient levels of pesticides may be sufficient to cause harm.

The level of uncertainty surrounding the threat is also addressed in that there is “very little awareness of the nature of the threat” (Carson 1962) resulting in the American population being treated as if they were “200 million human guinea pigs” (Wodka 1976:79).

4.2.2 Economic Risks

In an attempt to counter industry’s “jobs or health” argument, environmental advocates look to corporate profits, instead of jobs and wages, as the bank from which environmental restoration funds can be drawn. They also tout occupational disease as being economically taxing in its own right, citing workers compensation claims, welfare, Medicaid and aid to Vietnam veterans exposed to Agent Orange (Hilgartner 1985).

4.2.3 Decision Making

It does not appear that a great deal of attention is paid to reforming the decision making process, as most of the energies of the time are spent simply raising the public’s awareness. Government is, in general, still believed to be able to support the best interests of the citizens if they are simply made aware of the problem. This, however, is not a universal belief, as the FDA and Department of Agriculture are accused of being “in hiding” regarding the effects of pesticides and responding to the greatest economic power (Wodka 1976).
While industry promotes 'sound science' and 'objective evidence' the environmental movement is relatively silent on this issue. This silence may be due to the newness of the controversy and the fact that it hasn't matured to the state where science can be seen as promoting the movement's goals.

4.2.4 Calls For Action

The corporation falls under the most attack from the environmental movement as Earth Day identified and challenged the central responsibility of industry in generating environmental hazards. In addition, Silent Spring offers a critique of the current economic system, defining it as an "...era dominated by industry where the right to make money, at whatever cost to others, is seldom challenged" (Carson 1962).

In an attempt to counter industry's portrayal of environmentalists as lunatics and misinformed, some members of the movement accused industry of being prone to "irrational fears" surrounding the economic effects of regulation (Hilgartner 1985).

4.2.5 Summary of Environmental Justice Frame

During the 1970s, there was only the briefest hint at the cause and effect relationships between industrial chemicals and human health effects. As such, environmental advocates relied upon the more established, but still controversial, findings of wildlife degradation. Their attacks against industry were, therefore, based more on the broad dangers of industrial pollution and on the regulatory and economic systems which allowed corporations to operate with relative impunity. This approach mirrored the tone of the day, as the contemporary environmental movement was created against a backdrop of large scale protests (civil rights, Vietnam) against system failures.
4.3 Signature Matrix

Having outlined the positions of the two key sponsors, we will now summarize them in the form of a signature matrix, a concept developed by Gamson and Lasch (1983).

For the purposes of this period of the analysis, the industry-sponsored frame has been given the name Rational Trade-Offs while the environmental frame has been called Silent Spring.

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>Rational Trade-Offs</th>
<th>Silent Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metaphors</td>
<td>Silent Spring is a piece of science fiction.</td>
<td>200,000,000 human guinea pigs. The balance of nature is upset.</td>
</tr>
<tr>
<td>Exemplars</td>
<td>Our standard of living is a direct result of the benefits of pesticides.</td>
<td>Massive kills of wildlife and beneficial insects.</td>
</tr>
<tr>
<td>Catchphrases</td>
<td>Trade-offs; sound science.</td>
<td>Where there's pollution there's profit.</td>
</tr>
<tr>
<td>Depictions</td>
<td>Companies can be trusted to control risk.</td>
<td>Increased human suffering.</td>
</tr>
<tr>
<td>Roots</td>
<td>The practical benefits of our economic system.</td>
<td>The right to make money at all costs.</td>
</tr>
<tr>
<td>Consequences</td>
<td>Irrational regulation will lead to an end of modern society.</td>
<td>Man will end up destroying the earth.</td>
</tr>
<tr>
<td>Appeals to Principle</td>
<td>Rational decision making; no room for emotion.</td>
<td>People over profits.</td>
</tr>
</tbody>
</table>

Table 1 - 1960 to 1980 Signature Matrix

The developing environmental controversy can be seen as the result of Silent Spring's efforts to reframe the status quo. Given the relative newness of the environmental debate, Silent Spring does not have a particularly strong action orientation. Rather, it is a frame that is in its infancy and is rooted more in warning of the dangers of the current system rather than demanding immediate reform. The health effects are, for the most part, focused on animal studies, as environmental science is still in its infancy.

In response to the weak challenge offered by Silent Spring, the dominant Rational Trade-Offs frame can be seen as essentially a frame designed to remind the public of the benefits of maintaining the status quo as well as warning of the dire consequences of emotional policy setting.
4.4 Chapter Summary

The 1960s the 1970s were a time of significant and unforeseen social upheaval. Against the backdrop of the civil rights movement and Vietnam War protests, the country’s traditional institutions witnessed an unprecedented attack on their place in contemporary society. This probing critique of the status quo was also a phenomenon of the early environmental movement, as the chemical industry began to be baptized in the court of public opinion.

As evidenced by Rational Trade-Offs and Silent Spring, environmental controversy was a new and emerging phenomenon. As such, the antagonists initially occupied extreme positions in an early attempt to test the waters of public opinion. Having thus defined the ‘before’ picture, we will now turn our attention to the 1980s, a decade when the controversy began in earnest.
5. THE 1980S: EMERGENCE OF ENVIRONMENTAL JUSTICE

The 1980s was a decade during which both the environmental justice movement and the dioxin controversy became increasingly prominent features on the popular landscape.

5.1 Industry Frame

Public awareness of the effects of toxic chemicals hit a new high in the 1980s. In 1984, methylisocyanate leaked from a Union Carbide plant at Bhopal, India resulting in the deaths of two thousand residents. The images of this catastrophe combined with the domestic NIMBY campaigns had a widespread effect on the public’s perception of the chemical industry.

The public at the time thought we were lower than a snake’s belly (Kennedy 1991).

5.1.1 Health Risks

During the 1980s, industry advocates continued to stress that chemical risks are minor and controllable while emphasizing the general lack of evidence linking chemical exposure to human health effects:

finding tools to make this causal nexus strains both medical and environmental sciences and probes the frontiers of environmental health (Ember 1980).

Industry advocates also downplayed the public’s concerns over the effects of chemicals, coining the phrase ‘chemophobia’ and stating that,

Fear of chemicals is the most popular disease we have just now (Doan 1980).

With respect to dioxin, the discourse was more complex. Recall that early in the 1980s, a general consensus emerged that while dioxin was toxic to animals, the human health effects may be overestimated.

Although many health effects studies are under way, scientists have yet to find that any human effects resulting from exposure to dioxin (C&EN 1983).

This point was reiterated by Dow’s then-president and chief executive officer (Paul Oreffice), when he described the anticipated results from Dow’s
'voluntary' investigation of its Midland, Michigan facility. At a press conference announcing the study, Mr. Oreffice was quoted as saying that he

...does not expect new data to challenge the company’s judgment that the low levels of dioxin likely to be encountered in the workplace or the environment pose no threat to human health (C&EN June 6 1983 p. 8)

As such, some were calling for a shift away from studying dioxin towards environmental problems of greater actual severity.

Frankly, we are concerned about continuing to [cry] 'wolf.' There are so many important problems in this country in terms of health issues that we are very concerned that we now (need to) begin to put our dollars where there are actual data of significance on people dying...In the case of dioxin, we don’t have in our records a single case of a person dying from a dose of TCDD (C&EN 1983).

In the latter part of the decade, however, greater attention was given to the presence of dioxin in consumer paper products. Industry’s response to this new threat can be summarized with the following quotation from the American Paper Institute:

...any risk to consumers from normal use of [paper) products may be as low as zero and is considerably less than the one-in-a-million risk level used by government to determine a virtually safe dose (C&EN 1988).

5.1.2 Economic Risks

Within the chemical industry as a whole, especially during the early 1980s, calls for attention to the dire economic consequences of regulation are continuing themes:

For businessmen, the implications are clear: more regulation, higher costs, fewer jobs, and limited production. For me as a scientist and a consumer, the implications are also clear: high prices, higher taxes, fewer products - a diminished standard of living (Whelan 1981:7).

With respect to dioxin, however, industry remained relatively silent on the economic impacts of regulation. A possible explanation for this silence could be that energies were being spent on understanding the nature of the problem, and until this was sufficiently resolved, there were no widespread calls for regulatory action.

A second reason for this relative absence of rhetoric could be that this was also the Reagan 1980s where deregulation was the operative theme. As
such, industry may have been assuming that there was little political will to enact regulatory measures. Engaging in the debate with the environmental justice movement would, therefore, be unnecessary.

5.1.3 Decision Making

The 1980s witnessed a growing awareness of the social context in which industry operates. Accordingly, there appeared be the beginnings of a shift away from their adversarial position towards one of cooperation and consultation.

...When we are talking about serious societal problems such as hazardous waste disposal, then we should work together for a comprehensive solution. The problem is manageable. We can manage it more effectively by cooperation (Shapiro 1980).

Titles of magazine editorials such as “Chemical Industry Public Relations” and “The Bond Between Chemistry and Society” also hint at this newfound perspective.

In addition, there is a growing sense among the chemical industry that societal forces are becoming a significant influence on their business. As such, business decisions need to reflect this new variable. In describing Hooker Chemical’s approach to Love Canal, Robert Roland, then president of the Chemical Manufacturers Association offers industry’s perspective:

A decision made in 1980 would by necessity be different from a decision that was made in 1975....The legal concerns...are no less grave today than they were then, but the recognition of the terribly adverse impact that the media can have, that inappropriate governmental response can have, that human expectations can have on such a problem demand a response that may be less legalistic and more humanistic (Roland in Ember 1980).

This perspective is also echoed in the need for a “growing sensitivity to social values and goals which may be different from those of the past” (Brown 1982).

One of the most dramatic byproducts of this increased awareness of public concerns was the introduction of industry’s Responsible Care program. Responsible Care is a voluntary code of practices that currently enjoys wide
acceptance by the members of the chemical industry. Responsible Care consists of six codes of practice of which the Community Advisory code is viewed by some as the most important.

5.1.4 Calls For Action

In general, the chemical industry continued to call for additional studies and more information before any regulatory measures were considered. In 1989, EPA issued standards under the Clean Water Act to control dioxin releases from bleached paper mills. In response, industry filed suit in an attempt to block these regulations, calling them “arbitrary” and citing procedural challenges to their formulation.

5.1.5 Summary of Industry Frame

While there was greater attention being paid to public opinion, this is not to say, however, that the mantra of cooperation and public accountability was universally adopted. NIMBY was having a marked effect on industry practices and there was still much concern due to the public’s ‘misunderstanding’ of the facts, their ‘gross distortions of the truth’ and their ‘blind opposition and near superstitious rejection’ of waste facilities. Nevertheless, with respect to general industry strategies, the industry underwent a shift, if only slightly, away from the traditional confrontational approach to one with a potential for ‘enlightened compromise.’

During this time, the dioxin controversy was gaining popular momentum. Industry positions on this issue remained consistent with their overall theme of sound science and cost-benefit analysis. During the 1980s, however, dioxin was still an emerging issue. As such, more attention was spent on exploring the nature of the problem than promoting or defending any specific regulatory action.

An additional perspective on industry’s dioxin positions may be gleaned from the contents of an American Paper Institute internal
memorandum dated March 2, 1987 (Greenpeace 1989:9). In it, the API appears to treat dioxin as a public relations concern and sought to:

i. keep all allegations of health risk out of the public arena—or minimize them;

ii. avoid confrontations with government agencies which might trigger concerns about health risks or raise visibility of issues generally;

iii. maintain customer confidence in integrity of product; and

iv. achieve an appropriate regulatory climate.

5.2 Environmental Justice Frame

With the national media coverage of Love Canal, community-based activists began to realize that they were not alone in their struggle. As a result, they discovered a renewed sense of purpose and increased the frequency and intensity of their demands on complacent regulators and corporate polluters.

The 1980 grassroots victory at Love Canal acted as a catalyst for the environmental justice movement. This concrete example of ‘corporate greed and government’s failure to protect its citizens’ sparked a myriad of similar contamination protests throughout the country. Activists used the media to help persuade the larger community of the severity associated with toxic wastes, and people found it easier to be convinced that they, too, could be potential victims of “another Love Canal” (Szasz 1994:70).

These grassroots campaigns mirrored early attempts at pollution control in its focus on ‘end of pipe’ strategies. Protests to stop incinerators, landfills and other noxious facilities were essentially designed to ‘plug the toilet’ and raise the stakes associated with conventional waste management practices. Abandoning the negotiation philosophy of the mainstream groups, grassroots activists blockaded landfills, delivered large samples of toxic waste to legislative bodies, and used other confrontational tactics to push their reform agenda.
From the creation of the regional networks and information sharing, traditional NIMBY (Not In My Back Yard) approaches became more sophisticated. It was no longer enough to remove an injustice from 'my backyard' for it would just be placed somewhere else. This gave rise to the NIABY (Not In Anybody's Backyard) and ultimately to NOPE (Not On Planet Earth), strategies that moved towards a more permanent, sophisticated and ambitious solution: that of pollution prevention.

There is consistent explanation for the few instances of environmental success: they occur only when the relevant technologies of production are changed to eliminate the pollutant. If no such change is made, pollution continues unabated or, at least—if a control device is used—is only slightly reduced (Commoner 1987).

This issue expansion was also accompanied by "an increasingly comprehensive, totalizing critique of modern economic production and forms of political power" (Szasz 1994:80). Implicit in this critique is a challenge to the dominant belief that economic growth is absolutely good and that its benefits trickle down to everyone.

While the end of the 1980s saw a vast but loosely articulated environmental justice movement, it could no longer be thought of as narrow, selfish or shortsighted. Even if, tactically, the movement mostly took the form of local actions against single local targets, those local actions were increasingly informed by explicit, long term goals of radical social change and by visions of a just society. Charges of NIMBYism may have been justified in the late 1970s and early 1980s, by the end of the decade, they were no longer fair or accurate (ibid. 83).

5.2.1 Health Risks

As the debate matured, the sophistication of the rhetoric also grew, and the environmental justice movement attempted to counter industry's science-based 'the dose equals the poison' position:

The cancer dose-response curve can be compared to shooting someone with a gun - the chances of killing your victim are better if you fire hundreds of bullets, but one bullet can be deadly (Ohio Public Interest Campaign 1985:2)
While research into dioxin’s effects on the ecosystem continued, the 1980s saw a shift in concern towards the human health arena. With this increased scientific effort, new information began to emerge. While there was significant uncertainty with respect to its human toxicity, the environmental justice movement staked out an aggressive position:

TCDD is also the deadliest substance ever produced. Its toxicity has been compared to plutonium—the EPA’s procedures for handling these two materials are the same (Greenpeace 1989:7).

5.2.2 Economic Risks

The environmental movement takes industry’s warnings of regulation-induced economic harm as a campaign of ‘jobs blackmail’ and a continuing example of industry putting profits before people’s health. Labor advocates view this as implicit coercion and

feel powerless to change unhealthy conditions because, in the current economic climate, they know they are easily replaced. Fear of being fired prevents them from speaking publicly about their jobs (Brown and Scheier 1981:28).

As previously mentioned, the Reagan Eighties were not a time for significant, production-oriented regulatory action. As such, industry was not busy publicizing the dire consequences of legislation. Accordingly, this component of the environmental justice frame was similarly silent.

5.2.3 Decision Making

Environmental justice advocates see industry as having exclusive power to make decisions that threaten the community’s health. As such, they are calling for ..."direct citizen representation in all decision making" and the “the social governance of the means of production” (Commoner 1989:12).

With regard to dioxins, the environmental justice movement also counteracted industry’s willingness to acquire more information prior to taking any preventative action:

It’s totally unnecessary...It’s the classic ‘further study’ in place of taking any regulatory action. They know there are hazardous levels of dioxins and furans in pulp and paper products. There’s simply no need for further study (Greenpeace 1989:10).
5.2.4 Calls For Action

In a broad sense, the perceived threat of chemical exposure lead some to advocate sweeping industry controls:

We will never have the resources to study the effects of each chemical, much less the effect of combinations of chemicals. The only hope is to reduce chemical exposures. THIS WILL REQUIRE US TO PRUNE THE SIZE OF THE CHEMICAL INDUSTRY (Environmental Research Foundation 1989 - emphasis in original).

This theme was also echoed by Greenpeace in 1989 as their interpretation of the dioxin threat lead them to push for complete elimination of organochlorine discharges by 1993 (Greenpeace 1989:11)

5.2.5 Summary of Environmental Justice Frame

The fundamental aspect of the environmental justice movement, the issue of people’s rights, emerged during the 1980s. In 1984, the National Campaign Against Toxic Hazards produced a ‘bill of rights’ that was later modified by CCHW. 4

This People’s Bill of Rights summarizes the main themes of the environmental justice frame, and consists of the:

i. right to be safe from harmful exposure;
ii. right to know;
iii. right to clean up;
iv. right to participate;
v. right to compensation;
vi. right to prevention;
vii. right to protection and enforcement (CCHW 1986).

5.3 Signature Matrix

The two principle frames are summarized in the following signature matrix.

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4 The complete Bill of Rights is found in Appendix A.
While still advocating the need for sound science and bemoaning the public's ignorance of the facts, industry seemed to soften its negotiation stance. While remaining fundamentally committed to objective decision making and cost benefit analysis, it realized the deleterious effects of negative public opinion, and as such, the industry initiated significant programs to both improve and promote its own practices. As a result, its 1970's *Rational Trade-Offs* frame evolved into a frame for the 1980's: *Issue Management*.

During the 1960s and 1970s, the environmental movement was in its formative years, with much effort spent simply increasing the public's awareness of the issues. During the 1980s, with the help of Love Canal, the toxic waste issue broke through and became salient with the general public. As such, the early *Silent Spring* frame (primarily concerned with increasing the public's awareness) evolved into a more action oriented frame, *People's Rights*.

From a macro perspective, the evolution of the two principle frames follows a logical path. The early frames (*Rational Trade-Offs* and *Silent Spring*) were relatively passive as the issues were just gaining ground. However, with increasing indications of dioxin's harmful potential, these frames matured and were more focused and purposeful. The conflict is clear: *Issue Management* sought to finesse the issue in the face of *People's Rights* demands for reform.

<table>
<thead>
<tr>
<th>Issue Management</th>
<th>People's Rights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sponsors</strong></td>
<td>Chemical Industry</td>
</tr>
<tr>
<td><strong>Metaphors</strong></td>
<td>Chemophobia</td>
</tr>
<tr>
<td><strong>Exemplars</strong></td>
<td>99.4% of all wastes have been responsibly managed.</td>
</tr>
<tr>
<td><strong>Catchphrases</strong></td>
<td>Responsible Care</td>
</tr>
<tr>
<td><strong>Depictions</strong></td>
<td>Issues can be effectively managed through cooperation</td>
</tr>
<tr>
<td><strong>Roots</strong></td>
<td>The public's poor perceptions and misunderstandings</td>
</tr>
<tr>
<td><strong>Consequences</strong></td>
<td>Zero risk means zero growth means zero jobs</td>
</tr>
<tr>
<td><strong>Appeals to Principle</strong></td>
<td>Enlightened compromise;</td>
</tr>
</tbody>
</table>

*Table 2 - 1980's Signature Matrix*
5.4 Chapter Summary

On the environmental front, the 1980s saw two significant events: Love Canal and the election of Ronald Reagan. Accordingly, the grassroots environmental movement witnessed a surge in membership and new found political power while industry began to bask in the glow of deregulation.

These positions are manifested in the dioxin controversy by the environmental justice movement's adoption of the People's Rights frame and industry's use of Issue Management.

Of particular interest, however, was industry's relative silence on the economic consequences of regulation. It is important to note that during the 1960s and 1970s, the overall debate took place in a sphere of fundamental ignorance regarding the human and ecological health effects of chemical compounds. With no scientific consensus on any environmental issue, the debate was essentially unbounded and the antagonists were free to leap to unsubstantiated extremes in championing their respective frames. Hyperbole was commonplace and we were being warned that chemical regulation would bring the "end of modern society" while at the same time being told that unconstrained industrial practices would "end up destroying the earth."

During the 1980s, however, much effort was spent in an attempt to better understand the problem and to partially fill this void of ignorance. Industry placed a great deal of importance on these new studies, and in 1983, Dow Chemical announced a $3 million program of dioxin sampling and analysis at its Midland, Michigan facility. With this increase in scientific information, the controversy began to shift. Whereas in previous years the data were not widely available to support conclusions, scientific data were now beginning to be introduced into the debate.

The dynamic of this early debate was one in which the environmental justice movement was voicing general concerns regarding the effects of toxic chemicals while industry responded with scientific studies demonstrating the
relative safety of specific chemical compounds. As such, industry countered the environmental justice movement's emotional calls for action with neutral, rational and objective scientific evidence. This strategy proved effective during the 1980s aided, in part, by the Reagan Administrations laissez faire policies.
6. 1990 TO 1995: CONTEMPORARY ENVIRONMENTAL JUSTICE

We will now turn our attention to the period between 1990 and 1995, a time when scientific information was no longer the exclusive domain of industry advocates. Buoyed by a surge in public scientific research, both sides continued to increase the level of rhetoric:

They are talking past one another. Each is promoting the scientific data and opinion that favor its own positions, downplaying critical areas of uncertainty, and obfuscating data that don't help its cause (C&EN 1994).

6.1 Industry Frame

6.1.1 Health Risks

With the publication of EPA's long awaited dioxin reassessment, the debate over health risks was formally broadened to include both the relative severity of the risks as well as the methodology used in risk determination. While downplaying the nature of the health effects, industry-backed organizations also viewed EPA's work as "alarmist" and they expressed "serious misgivings" concerning the scientific merit of the risk assessment.

On the scale of things to worry about in life, environmental exposure to dioxins ranks pretty low. There is no direct evidence to show that any of the effects of dioxins occur in humans at everyday levels (Murray in Hileman 1994)

The risk characterization chapter contains 'sky is falling statements that don't belong in a scientific document' (Stone 1994).

EPA greatly overstates the level of background human exposures to dioxins and the potential for dioxins to cause adverse health effects at low doses (Chlorine Chemistry Council in Risk Policy Report 1995).

6.1.2 Economic Risks

The controversy was also heightened when both Greenpeace and the International Joint Commission called for phaseouts of organochlorines. Industry viewed these recommendations as a fundamental attack on its livelihood and portrayed the efforts of these two organizations as attempting to "eliminate all chlorine-based industry" (Hirl in Chemical Week 1995). As such, sponsors of the industry frame warned that the consequences of
banning chlorine or other toxic chemicals could lead to massive, unjustified economic impacts, as these chemicals are “fundamental” to “our nation’s economy” (Roland 1992).

6.1.3 Decision Making

Industry’s central position on how regulatory decisions are to be made can be summarized in one phrase: ‘sound science.’

It is equally important that all steps involved are taken on the basis of an unbiased and constructive approach anchored in sound science. (Roth 1993)

It is critical to use sound scientific judgment to establish the association between adverse environmental effects and the responsible chemicals. (Hileman 1993).

This approach is also pervasive in industry’s positions on a host of other regulatory matters. As such, 1993 witnessed the formation of The Advancement of Sound Science Coalition, a Washington, D.C.-based group dedicated to ensuring that sound science, and not emotion, drive public policy making. The backers of this group include chemical, biotechnology, agricultural and petroleum companies.

6.1.4 Calls For Action

This element of the controversy surrounds public calls for phaseout of entire classes of chemical compounds (organochlorines and other persistent bioaccumulative toxins). Instead of such sweeping, widespread regulatory action, industry advocates support a more measured, case-by-case approach:

Phaseouts and bans are neither scientifically supportable nor a socially responsible policy for dealing with chlorinated organic compounds used by society at the present time...the reasons advocates present for such a ban are of questionable scientific significance as well as misleading (Hileman 1994).

We believe any EPA initiative should focus on achieving pollution reduction that is necessary to protect human health and the environment and should not be aimed at mandating—as in the case of TCDD—which bleaching chemicals are or are not acceptable (Hanson 1990).

6.1.5 Summary of Industry Frame

The United States is a world leader in the manufacture and export of synthetic organic chemicals. These chemicals are embedded in most of the
products used in our society. We enjoy one of world’s highest living standards as a direct result of our access to these valuable products.

Today, the production, use, and disposal of toxic chemicals are wisely managed. Any changes to this responsible system of chemical stewardship must be based on a judicious decision making process where the risks of a chemical are scientifically assessed and the costs and benefits are systematically accounted for. Where credible science shows that the risks clearly outweigh the benefits, changes will be made. Well-informed decision-making must be the modus operandi, and we need to take great care to prevent anecdotal evidence and emotional sentiment from driving policy.

6.2 Environmental Justice Frame

During the mid- to late 1980s, as the mainstream environmental movement was faltering due to its inability to be a truly inclusive social force, the environmental justice movement was expanding its grassroots base. Early NIMBY actions gave way to more sophisticated and long-term pollution prevention strategies, and the movement was emboldened by the wisdom of the early civil rights campaigns. These combined forces created a common meeting ground for the economically disadvantaged, people of color and all those who viewed the threat of industrial pollution as a violation of basic human rights. These groups now had the beginnings of an effective social movement through which to express their simmering anger and frustration.

6.2.1 Health Risks

Advocates of the environmental justice frame maintained a consistent position regarding dioxin’s effect on human health.

Dioxin is a dangerous chemical and a serious public health threat. No amount of additional exposure is safe (Gibbs 1995:33).

Dioxin and dioxin like substances represent the most perilous threat to the health and biological integrity of human beings and the environment (Commoner in Rachel’s Environment and Health Weekly #405).
With the publication of EPA’s draft risk assessment, Lynn R. Goldman, EPA Assistant Administrator for Prevention, Pesticides and Toxic Substances, also adopted the movement’s health-risk platform:

Dioxin risks are in a range that we believe is unacceptable (Hileman 1994).

6.2.2 Economic Risks

With regard to industry warnings of impending economic collapse if chlorine bans are carried out, sponsors of the environmental justice frame responded on two fronts: first downplaying the magnitude of the costs and then justify the lower expenditure.

Firstly, industry estimates were attacked for being alarmist, containing ‘unreasonable’ and ‘faulty’ assumptions, and ignoring the existence of reasonable substitutes. In addition, industry’s position report was challenged on historic grounds, as the environmental justice movement compared these economic forecasts to industry’s arguments against sulfur dioxide regulations:

Utilities warned that the cost of cleaning up their emissions would be $1,000 a ton. The real cost turned out to be $140 a ton (Gibbs 1995:288).

The environmental justice movement, however, realized that their version of reform would entail considerable cost. As such, they sought to justify this expenditure on a more fundamental and ethical plane:

The cost of change is a much better investment than the cost of the status quo. The cost of the status quo must include the cost to our health. What is the price of infertility? Of birth defects? Of cancer? (Ibid. 289).

6.2.3 Decision Making

The movement’s decision-making position is rooted in the Precautionary Principle. Briefly stated, the Precautionary Principle means that society should cease and activity if the weight-of-evidence (no absolute scientific proof is necessary) indicates that significant environmental damage would result if the activity was to be continued (Cameron and Abouchar 1991). Weight-of-evidence is a concept which resonates with the public as this familiar principle is used in the modern day legal system ("the preponderance
of the evidence leads us to convict the guilty party of...”.) By favoring the weight-of-scientific-evidence approach over the chemical-by-chemical technique, citizen groups take advantage of the inconclusive nature of the traditional scientific method while at the same time offering up a credible alternative, thereby increasing their technically legitimacy to both their constituents and the media.

Because of overlapping and interactive effects among persistent toxic substances, causality and proof of harm are elusive, if not impossible to obtain. That is why a preventative approach to harm is needed based on weight of evidence rather than on absolute proof of harm (Hileman 1994).

...the Parties adopt and apply a weight-of-evidence approach to the identification and virtual elimination of persistent toxic substances (IJC 1992:57)

People across America and around the world now have enough evidence to convict dioxins as a grave public health threat (Hileman 1994).

6.2.4 Calls For Action

Reform, however, is the essence of the environmental justice movement. With respect to the dioxin controversy, this is manifested in calls for the elimination of dioxin by phasing out the mass production and use of elemental chlorine.

If the lessons of Times Beach, Love Canal, and Agent Orange teach us anything, it is that we should stop producing and using chemicals that will end up poisoning us (Gibbs 1995:33).

We believe that EPA (as a result of its dioxin reassessment) is obligated to set a national policy consistent with the threat—one that identifies and eliminates all sources of or exposures to dioxin-like compounds (Hileman 1994).

Gradual phaseout of and an eventual ban on chlorine and chlorine containing compounds used in industrial processes is urged in a report issued last week by the IJC....IJC also recommends phasing out and eventually banning processes that lead to creation of dioxins....the commission used a weight-of-evidence approach to decide that most organohalogens are harmful. (Hileman 1993).

6.2.5 Summary of Environmental Justice Frame

Few of the approximately 65,000 chemicals in use in North America have been tested for adverse health effects. Given that these compounds are in the market place, the environmental justice frame calls for the burden of
proof to be placed upon the producer, stating that it is up to the chemical proponent to demonstrate that an existing compound is ‘safe.’

This is not a simple task, however, as ‘safe’ is a highly subjective term fraught with scientific controversy, and adequate studies can take years to complete. Proponents of the environmental justice frame counteract this tendency to await for proof (which they perceive as a stalling tactic) by relying upon a ‘weight-of-evidence’ approach based upon the precautionary principle. Weight-of-evidence is a concept which resonates with the public as this familiar principle is used in the modern day legal system (“the preponderance of the evidence leads us to convict the guilty party of...”). By favoring the weight-of-scientific-evidence approach over the chemical-by-chemical technique, citizen groups take advantage of the inconclusive nature of the traditional scientific method while at the same time offering up a credible alternative.

In addition, the concept of scientific credibility is also addressed through the discussion of thresholds. The idea of a threshold is that below a definitive concentration (dose), the chemical poses no risk. This is the fundamental principle of modern toxicology and is the cornerstone of the industry-backed frame. However, the environmental justice frame disputes this assertion and offers the statement that dioxin is toxic at any dose. As such, given that any dose is harmful, and combined with the fact that no treatment technology is 100% efficient, the only logical solution is a ban on dioxin production.

As previously mentioned, such a ban would call for significant changes in modern industrial processes. If these changes are to be implemented, then the environmental justice frame also has suggestions on how to manage this transition by appealing to democratic ideals and principles.

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5 Briefly stated, the Precautionary Principle means that society should cease and activity if the weight of evidence (no absolute scientific proof is necessary) indicates that significant environmental damage would ensue if the activity is continued. (Cameron and Abouchar, pp. 2).
The democratic sub-theme forces the debate away from the inconclusive nature of scientific arguments confined to toxicological bickering to one that is centered around fundamental values, citizen rights and democratic ideals. The main thrust of this frame is that it shifts the burden of *responsibility* onto the corporation, a strategy that is consistent with the toxics movement’s increased sophistication as they have begun to tackle more complex, upstream issues. Whereas individual action (recycling, riding mass transit, etc.) may have alleviated some of the more mundane environmental concerns of the past, removing dioxin from the ecosystem is more complicated as “you can’t lifestyle your way out of it.”

By fighting the battle in this manner, the environmental justice movement seeks to establish and increase support amongst its constituents. ‘Threshold’ is used not only to counter industry’s reliance upon the plodding nature of ‘sound science’ but also to gain technical legitimacy by using an alternate but familiar principle (weight-of-evidence). Democracy is employed so as to demonstrate that citizens themselves have both the ability and the right to implement the necessary changes resulting from an adoption of the precautionary principle.

### 6.3 Signature Matrix

The two principle frames are summarized in the following signature matrix.

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### Table 3 - 1990 to 1995 Signature Matrix

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>Better Living Through Chemistry</th>
<th>Poisoned Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metaphors</td>
<td>The dose makes the poison.</td>
<td>There is no safe exposure to dioxin.</td>
</tr>
<tr>
<td>Exemplars</td>
<td>Chlorine's contribution to our high standard of living</td>
<td>Dying From Dioxin</td>
</tr>
<tr>
<td>Catchphrases</td>
<td>Sound Science</td>
<td>Time For Action</td>
</tr>
<tr>
<td>Depictions</td>
<td>A declaration of war on modern society</td>
<td>Social governance of the means of production</td>
</tr>
<tr>
<td>Roots</td>
<td>Shareholder value</td>
<td>Individual rights</td>
</tr>
<tr>
<td>Consequences</td>
<td>An 1850s lifestyle</td>
<td>By stopping dioxin exposure, we will reclaim democracy.</td>
</tr>
<tr>
<td>Appeals to Principle</td>
<td>Risk Assessment, Cost-Benefit Analysis</td>
<td>Precautionary Principle</td>
</tr>
</tbody>
</table>

As can be inferred from Table 3, *Issue Management* has given way to the more rigid themes of *Better Living Through Chemistry*. By doing so, the chemical industry has shifted from its 1980s position of attempting to influence the debate by utilizing what appeared to be promising scientific data. Instead, the industry sponsors have upped the ante to encompass the entire universe of industrial chemistry: “as goes chlorine so do all chemicals.” From the environmental justice perspective, the anger of PR appears to have evolved into an action-oriented frame aimed at taking back the power usurped by corporations and complacent government.

### 6.4 Chapter Summary

The period from 1990 to 1995 witnessed a significant retrenchment of positions in the dioxin controversy, with industry circling the wagons around all industrial chemicals while the environmental justice movement began to attack the fundamentals of the political and economic system.

The early 1990s also saw the debate begin to focus around dioxin and chlorine. From an environmental justice perspective, there is recognition that chlorine has significant societal benefits; as such, vociferously advocating for its ban could be detrimental to the *Poisoned Communities* platform.
From the industry perspective, nothing good can be said with regards to dioxin. Therefore, Better Living Through Chemistry's strategy is to paint the Stop Dioxin Exposure Campaign as an attempt to “ban an element of the periodic table.”

The dichotomy of this controversy can best be exemplified by the titles of two recent publications that figure prominently in the dioxin debate: *Dying From Dioxin* (CCHW publication) and *The Changing Chlorine Marketplace* (proceedings from an industry-sponsored conference.)

This examination of the *Poisoned Communities* and *Better Living Through Chemistry* frames brings to a close the observations section of this thesis. We now turn our attention to investigating the effectiveness of these frames in the forum of public opinion.
PART III - ANALYSIS AND DISCUSSION

The preceding three chapters traced the development of the two main frames as they evolved through the course of the dioxin controversy. Text to support these observations were taken from industry and environmental publications.

The real issue, however, is not which frame dominates in specialized journals or newsletters, but rather, how successful each frame is in the court of public opinion.

Chapter 7 is, therefore, devoted to an investigation of the mass media in an attempt to determine the relative dominance of Better Living Through Chemistry and Poisoned Communities. Based upon this analysis, Chapter 8 examines the strengths and weaknesses of the Stop Dioxin Exposure Campaign. Conclusions follow in Chapter 9.
7. **Outcome Measures**

This chapter studies selections of the mainstream media in order to gauge the relative dominance of the two principle frames in the dioxin controversy. Following this analysis of outcome measures is a discussion of the significance of this research to the environmental justice movement.

7.1 **Media Analysis**

7.1.1 **Methodology**

The media analysis involved examining articles from three large, metropolitan newspapers: The New York Times, The Los Angeles Times, and The Chicago Tribune. The time period for the analysis was three years, from 1993 to 1995. The time span was chosen in order to keep the sample size manageable and in an attempt to include any influence on the debate by EPA’s 1994 dioxin reassessment. The three newspapers chosen were selected in an attempt to get a broad, national perspective on the dioxin controversy.

The investigation was performed using the electronic search capabilities of Lexis/Nexus, and an article was included in the study if the word ‘dioxin’ or ‘dioxins’ appeared anywhere within the text. For the purposes of this research, articles are taken as to include newspaper stories, editorials and letters to the editor. In this study, these three categories are treated equally. As such, no attempt was made to give any one type of article extra significance or merit over another.

For the time period specified, a total of 232 articles were found that satisfied the search criteria. Of these articles, twenty-five were either duplicate articles (same story appearing in different newspapers) or articles dealing with dioxin contamination in a country other than the United States. These twenty-five articles were, therefore, removed from the analysis resulting in a final article sample size of 207.
The analysis consisted of screening each article for the presence (or absence) of either the industry or environmental justice frame. In addition, if a frame was found to be present, it was categorized as either 'strong,' or 'weak' depending upon the following criteria.

7.1.1.1 Environmental Justice Frame

Following on from our Chapter 2 discussion of the contemporary dioxin controversy, an article would be categorized as portraying a strong environmental justice frame if it included references to the following themes:

i. expressions of fear of being exposed to dioxin or describing health effects from dioxin exposure;

ii. calls for action to be taken to eliminate, phase-out or ban a chemical (i.e. chlorine);

iii. statements that there exists no safe threshold of dioxin exposure;

iv. demands that policy decisions be made on the basis of weight-of-evidence and the precautionary principle;

v. evidence of democratic approaches in effecting policy (petitions or referenda), or the promoting of citizen involvement in production decisions.

If, however, an article included general references to one or two of these themes, it was given a 'weak' label. If no reference to any of these themes appeared in the article, it was labeled as 'null.'

7.1.1.2 Industry Frame

An article would be categorized as portraying a strong industry frame if it included general references to the following themes:

i. the use of risk assessment to determine the safe or allowable exposure levels;
ii. the widespread benefits to society from technological progress and industrial activity;

iii. a reliance upon cost-benefit analyses in formulating policy;

iv. the economic toll of regulations on industry profitability, unemployment and the economy;

v. the use of sound science in place of emotion or conjecture in formulating policy;

vi. the characterization of *Poisoned Communities* as emotional, irrational and alarmist.

As with the environmental justice frame, an article with partial references to these themes was categorized as ‘weak.’ If no reference to any of these themes appeared in the article, it was labeled as ‘null.’

### 7.1.2 Data

The results of this analysis are summarized in the following histogram.

![Figure 1 - Article Histogram](image)

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-69-
7.1.3 Analysis

The distribution of the articles was fairly consistent over time, with 1993, 1994 and 1995 yielding seventy-three, seventy-nine and fifty articles respectively. The articles sources were not as balanced, with forty-four were attributable to the Los Angeles Times, sixty-three to the Chicago Tribune and one hundred from the pages of the New York Times.

With regards to dioxin sources, incineration (either of municipal or hazardous waste) was mentioned the most frequently (sixty-three articles). Agent Orange, dredge spoils and paper production were all tied for second place, each one being mentioned approximately twenty times. Seventy-nine articles did not list dioxin sources. The relationship between dioxin formation and the use of chlorine was also investigated. Of the 207 articles surveyed, the dioxin/chlorine link appeared thirty-five times (27% of the articles that listed the sources of dioxin).

Dioxin was specifically portrayed as a dangerous (toxic, carcinogenic or hormone disrupting) compound in approximately two-thirds of the articles. While there is some discussion (particularly before EPA’s 1994 Reassessment) of the potential overestimation of dioxin’s harm-inducing capabilities, the general message of the articles is that dioxin is a highly toxic compound.

In a conventional incinerator the chlorine from PVC plastics and other sources can form dioxin, a much feared poison. (Wald 1994)

This theme is further substantiated by the large number of occurrences (sixty-two) that dioxin is not specifically identified with a health effect. In a majority of these instances, the toxicity of dioxin is implied, and the reader is assumed to already be aware of dioxin’s health effects.

Opponents say they doubt that capping would be effective, that the site is in an area where wind and tidal action is very likely to disperse the contaminants. They asked for measurements of dioxin, PCBs, Cobalt 60 and other contaminants (Rather 1995).

Quantitatively, the portrayal of the two frames was generally even. The environmental justice frame appeared in 128 articles (4 strong and 124
weak) while the industry frame appeared in 124 articles (23 strong and 101 weak). With respect to balance, the strength of each frame was equally represented (strong/strong, weak/weak, or null/null) in 58% of the articles.

Keeping in mind the inherent subjectivity in this discussion, we will now investigate the nature of the outcome measures and attempt to draw some more subtle, frame-based conclusions.

### 7.1.4 Frame Dominance

Frame dominance was defined as occurring in an article when the strong version of a particular frame was paired with a weak or null version of the other frame; and, when the weak version was paired with the null version.

<table>
<thead>
<tr>
<th>Industry Frame</th>
<th>Environmental Justice Frame</th>
<th>Articles</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>Weak</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Strong</td>
<td>Null</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Weak</td>
<td>Null</td>
<td>29</td>
<td>14</td>
</tr>
</tbody>
</table>

**Table 4 - Industry Frame Dominance**

<table>
<thead>
<tr>
<th>Environmental Justice Frame</th>
<th>Industry Frame</th>
<th>Articles</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>Weak</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Strong</td>
<td>Null</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Weak</td>
<td>Null</td>
<td>35</td>
<td>17</td>
</tr>
</tbody>
</table>

**Table 5 - Environmental Justice Frame Dominance**

As is apparent from Tables 4 and 5, the industry frame is seen as having an advantage when in direct competition with the environmental justice frame. In addition, referring back to Figure 1, the strong version of the industry frame is represented nearly eight times as often as the environmental justice frame (23 vs. 4 articles). One general conclusion,
therefore, is that for these outcome measures, industry holds the dominant frame.

Both sponsors realize, however, that public discourse is not static. As such, industry advocates are at work solidifying their frame's dominance while the environmental justice movement is challenging the status quo. Accordingly, the next section will more fully explore the nuances of this competition in light of the current power balance.

7.2 Implications

Given industry's hold on the dominant frame, the environmental justice movement must offer a robust challenging frame in order to influence dioxin policy. While the environmental justice movement has created Poisoned Communities, the full message behind this frame does not appear to be making much headway in the discourse. This is evidenced by the marked difference between the number of times the strong and weak frames are portrayed (4 vs. 124).

Recall from Chapter 6 that the strong environmental justice frame is a mobilizing frame, containing a specific action-oriented agenda. Typical demands include reforming the underlying assumptions behind toxic chemical production and disposal, resurrecting democratic ideals and active citizen participation in industrial production decisions. In addition, sponsors of the environmental justice frame are pursuing a pollution prevention course, one that calls for participants in the movement to alter their consumption and purchasing patterns: issues which require individuals to take personal action.

The overwhelming portrayal in the news media, however, is of a weak version of the environmental justice frame. In this reaction-based frame, environmental advocates are widely aware of dioxin's potential for harm but they have stopped short of calling for personal action. Instead, solutions seem to be dependent upon third-party intervention (government ordering a
halt to incineration). There is no disputing that halting incineration is a major component of the environmental justice movement, and that effecting such change requires significant effort by movement participants. However, the fact remains that the weak environmental justice frame does not advocate long-term, action-oriented, pollution prevention strategies: one of the foundations of the contemporary environmental justice movement.

Herein lies the disconnect. While the weak environmental justice frame has succeeded in raising public awareness, its main emphasis is on singular, particular efforts. From a social movement perspective, this is inherently dangerous, for once a facility has been halted, the frame lacks further, long-term instructions necessary for movement sustainability. For the Stop Dioxin Exposure Campaign to be successful, the strong environmental justice frame needs to become more prevalent.

7.3 Chapter Summary

The major conclusion that can be drawn from this analysis is that the industry frame dominates public discourse. Accordingly, a challenging frame has been created and the environmental justice movement is actively promoting this frame in an attempt to sway public opinion.

In challenging the dominant frame, the environmental justice movement has indeed succeeded in raising the public's awareness of the dioxin issue. However, as demonstrated by the preponderance of the weak environmental justice frame over the strong environmental justice frame, this issue realization is essentially the limit to which the general public has adopted the environmental justice frame. While issue awareness is a fundamental ingredient for a social movement, this alone will not force change. What is needed, therefore, is a greater acceptance and personal incorporation of the fundamental, action-oriented platforms of the strong environmental justice frame.
This interpretation of this 'state of the frames' is consistent with the current activities of the Stop Dioxin Exposure Campaign. Recall that the campaign emerged from two previous Citizen's Conferences on Dioxin, held in 1991 and 1994. At these conferences, the emphasis tended to be on disseminating information and increasing awareness. However, the most recent Citizen's Conference, held in 1995, was entitled *A Time For Action*. Accordingly, one may conclude that the environmental justice movement is aware of the preponderance of the weak frame and is actively seeking measures to advance their stronger, action-oriented frame. As such, the following chapter analyzes, from a framing perspective, the efforts currently undertaken by the Stop Dioxin Exposure Campaign.
8. CAMPAIGN ANALYSIS

In seeking to increase the strength of the Stop Dioxin Exposure Campaign, one obvious strategy would be to incorporate new, untapped resources into the movement. From the analysis of the news media, however, it also appears that effort needs to be undertaken to supplant the weak environmental justice frame with its stronger sibling. Accordingly, along with increasing its existing membership base, the campaign needs to move its members towards a more action-oriented level of involvement. This is essentially what is taking place in the current phase of the Stop Dioxin Exposure Campaign.

As such, we will analyze the Stop Dioxin Exposure Campaign using the frame alignment strategies as introduced in Chapter 3. Secondly, we will critique these approaches and discuss their potential strengths and weaknesses. This evaluation will be performed keeping in mind both the obstacles (individual and institutional impediments) inherent in the process and the fact that sponsors of the dominant frame will likely seek to counteract any threats to the status quo.

8.1 Frame Alignment

8.1.1 New Recruits

Potential recruits to the movement may be grouped into two categories: the general, unconnected public and those who belong to interest groups and other voluntary associations.

8.1.1.1 Frame Bridging

Recall from Chapter 3 that by frame bridging, social movements attempt to gain access to “unmobilized sentiment pools” by physical linking the existing social movement frame with another “ideologically congruent but strictly unconnected frame.” In a simplified sense, frame bridging is analogous to placing the only bait you have on a hook, casting it out into the
water and hoping that something bites. Given that frame bridging does not allow for change or alteration of existing frames, there is little one can offer in the way of recommendations or suggestions. As long as there are fish that need to be caught (existing in unmobilized sentiment pools) this is a strategy worth continuing, as evidenced by CCHW’s long history with frame bridging techniques.

8.1.1.2 Frame Extension

With regard to accessing existing organizations, frame extension is the more useful approach. Recall that frame extension attempts to expand the boundaries of an existing frame in order to “encompass incidental points of view or that are of little consequence to its primary objective but of considerable salience to potential adherents.” As such, frame extension tends to be more of a strategic undertaking than frame bridging. Using the angling analogy, frame extension allows for a slight modification of the existing bait in order to catch the bigger fish.

On the dioxin front, the Stop Dioxin Exposure Campaign actively encourages its participants to create diversity and strength by reaching out (extending the frame) to include such organizations as diary farmers and cattle ranchers. One additional candidate for frame extension that I have not seen mentioned is the American Association of Retired Persons (AARP), one of the nation’s most powerful advocacy organizations.

Representing over thirty-four million members, the AARP figures heavily on key issues (health care, social security, etc.) that effect its members. While at first glimpse there may not appear to be a link between the Stop Dioxin Exposure Campaign and the AARP’s agenda, I believe there may be common ground with regard to dioxin’s potential health effects on the developing human embryo. The issue of endocrine disruption and its potential effect on the human fetus is already a mainstay of the Stop Dioxin Exposure Campaign. However, given the fact that a vast majority of the AARP’s members are either grandparents or potential grandparents, one
could also expect that the AARP may be sympathetic to this element of CCHW's campaign. With the gentrification of America, the AARP also represents the largest pool of disposable income. As such, it would be advantageous for the Stop Dioxin Exposure Campaign to win AARP's political and financial endorsement. The downside of approaching this association, however, is that the AARP is a conservative group and they may not be receptive to the more reform-based elements of the Stop Dioxin Exposure Campaign.

As mentioned at the beginning of this section, enticing new members to join the movement needs to take place in conjunction with a parallel effort to re-invigorate the membership.

8.1.2 Promoting Action

While we previously discussed the importance of increasing the number of movement sympathizers, the essential issue is the degree to which members are committed to the cause. Simply having a large following of new and existing supporters championing the weak environmental justice frame will not, in and of itself, result in the desired reforms. As the previous chapter's analysis indicated, and from the Stop Dioxin Exposure Campaign's perspective, there is substantial room for improvement in how often the strong environmental justice frame is portrayed in the media. It is the purpose of this section, therefore, to critique the techniques in which movement participants are being encouraged to "move from education to action" (Gibbs 1995:155).

8.1.2.1 Frame Amplification

Whereas frame bridging and frame extension were used to attract new support, energizing existing membership depends upon frame amplification and frame transformation. With respect to frame amplification, the Stop Dioxin Exposure Campaign is currently making good use of this strategy by
championing the democratic ideals contained in its campaign. As such, no specific recommendations are warranted.

8.1.2.2 Frame Transformation

Frame transformation, on the other hand, is the fundamental vehicle by which action follows from awareness. Recall from Chapter 3 that frame transformation is a two step process. First, there is a change in the perceived seriousness of the condition followed by a corresponding shift in "attributional orientation" or blame. While blame may be a simple notion, its importance in social movements cannot be underestimated. Blame serves as a rallying point from which action is directed.

At present, there is much effort being spent on the 'seriousness of the condition.' The potential health effects of dioxin are becoming increasingly familiar and the emerging issue of endocrine disruption continues to add fuel to the fire. From the media survey, the environmental justice movement can be seen as having partially succeeded in elevating the severity of the dioxin issue as evidenced by the relative frequency with which dioxin is classified as a harmful or toxic substance. The other half of the coin, however, is the corresponding assignment of blame.

Looking back on the recent history of the dioxin controversy, the original culprit was chlorine. This was evidenced by Greenpeace's call for a ban and the IJC's recommendation for its phaseout. In retrospect, however, while this attracted a great deal of media attention, industry was successful in casting these recommendations (especially Greenpeace's) as alarmist and an effort to ban an element from the periodic table. As such, Greenpeace eventually backed down from its earlier stance and instead of advocating a total ban, they are currently seeking to phase out chlorine's use in plastics, solvents and pulp and paper bleaching.

A more subtle ramification of this easing of positions, however, is that the movement seems to have lost a readily identifiable and potent target
upon which to affix blame. Whereas there was once a single focus (banning chlorine), the Stop Dioxin Exposure Campaign has since widened its list of offenders to include, among others, organochlorines, the current socio-economic system, all synthetic hormone disruptors, incineration, industrial practices, and the perceived complacency of government.

While I understand and appreciate the reasons behind this expansion, the diffusion of the issues has become so pervasive that it may intimidate sympathizers from becoming sufficiently committed to act. The Stop Dioxin Exposure Campaign is aware of this danger and spends fully half of Dying From Dioxin, explaining what ordinary citizens can do to help eliminate dioxin exposure. Nevertheless, when the culprit was just chlorine, the link between the problem (dioxin comes from chlorine) and what can be done about (begin the consumer-driven switch to chlorine-free products) seemed more direct and easier to grasp. While these strategies remain fundamental components of the Stop Dioxin Exposure Campaign, their salience has been diminished by the presence of other matters. As such, the propensity for individual frame transformations has been partially diminished.

8.2 Institutional Impediments

Apart from the difficulties of frame alignment, there exist a host of other inherent obstacles to building movement support. This section, therefore, analyzes the Stop Dioxin Exposure Campaign in light of these impediments.

8.2.1 Competing Definitions of the Problem

No one is in favor of dioxin; indeed, all parties in the debate advocate some degree of dioxin elimination. Some view it simply as problem of inadequate control technologies while others take the position that eliminating dioxin exposures requires fundamental changes in our current industrial and political system. Still others look to increased regulatory control as the most desirable solution. These examples, therefore, hint at the
struggles and hurdles that the environmental justice movement needs to overcome, within the environmental movement as a whole, in order to advance its own frame.

It is important to note that competing definitions also come from other camps. For example, industry supports voluntary approaches as a way of demobilizing the Stop Dioxin Exposure Campaign's call for stricter regulation and the reform of industrial practices.

8.2.2 Carrying Capacities

As previously mentioned, there exists a huge population of potential problems all striving for attention and space in the forum of public opinion. Accordingly, the Stop Dioxin Exposure Campaign must first compete to be noticed, and then once noticed, it needs to be addressed in the mass media. As the following table suggests, this competition is fierce.

<table>
<thead>
<tr>
<th>Issue (Mainstream)</th>
<th>No. Of Articles</th>
<th>Issue (Environmental)</th>
<th>No. of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>President Clinton</td>
<td>41,974</td>
<td>Cancer</td>
<td>20,762</td>
</tr>
<tr>
<td>The Olympics</td>
<td>17,034</td>
<td>HIV</td>
<td>3,586</td>
</tr>
<tr>
<td>Abortion</td>
<td>9,173</td>
<td>Asbestos</td>
<td>1,779</td>
</tr>
<tr>
<td>Super Bowl</td>
<td>7,386</td>
<td>Cigarette Smoke</td>
<td>595</td>
</tr>
<tr>
<td>Cocaine</td>
<td>7,344</td>
<td>Silicone Implants</td>
<td>499</td>
</tr>
<tr>
<td>O.J. Simpson</td>
<td>5,646</td>
<td>Chernobyl</td>
<td>479</td>
</tr>
<tr>
<td>Microsoft</td>
<td>4,695</td>
<td>DDT</td>
<td>307</td>
</tr>
<tr>
<td>Sexual Harassment</td>
<td>3,923</td>
<td>Acid Rain</td>
<td>306</td>
</tr>
<tr>
<td>Illegal Immigration</td>
<td>2,436</td>
<td>Dioxin</td>
<td>232</td>
</tr>
</tbody>
</table>

Table 6 - Issue Competition

In an attempt to highlight the level of competition within the mass media, the above table represents the number of articles from the New York Times, the Los Angeles Times and the Chicago Tribune that made mention of
the specific 'issue.' The time period for this analysis was the same as that of dioxin (1993 to 1995). While the limitations of such a coarse survey are obvious, it nevertheless serves as a rather effective depiction of where dioxin ranks on the public's radar screen.

8.2.3 Principles of Selection

To combat these impediments, the Stop Dioxin Exposure Campaign needs to personalize the nature of the dioxin threat. Doing so will increase the probability that the issue will resonate within the populace thus breaking through the hurdles of a finite institutional capacity. As such, members are urged to "Tell the stories that reveal the hidden cost of human suffering" (Gibbs 1995:290).

Given the personal nature of dioxin's reported health threats, it is understandable that one would tend to focus on these as a means of mobilizing support. The potential severity of the issue, however, is a double-edge sword. Banner headlines foreshadowing the end of the human race due to declining sperm counts may overwhelm the intended audience and result in resignation and paralysis rather than the desired effects of increased awareness and action. As such, the portrayal of possible health effects needs to be delicately undertaken so as to increase the likelihood of frame adoption while at the same time maintaining credibility and avoiding the 'Chicken Little' syndrome.

8.3 Opposing Frames

Up to now, we have discussed how the Stop Dioxin Exposure Campaign is attempting to get its message heard in light of the passive, institutional impediments that hinder this goal. The sponsors of the dominant frame, however, also seek to discount and remove the environmental justice frame from the public discourse. As such, this section examines the dynamic relationship between the two frames.
8.3.1 Macro Analysis

As previously discussed, *Rational Trade Offs* and *Silent Spring* were the early industry and environmental justice frames. During this time period (1960 - 1980) environmental issues were just beginning to emerge on the public scene. As such, there was little credible scientific information available to bound the controversy; accordingly, hyperbole and exaggeration were the norm.

During the 1980s, however, scientific information began to trickle in. *Rational Trade Offs* shifted to *Issue Management* as industry saw an advantage in continuing to dominate the discourse with this new evidence that appeared to de-toxify dioxin. From an environmental justice perspective, however, Love Canal and Bhopal demonstrated the very real dangers of the *laissez faire* approach. This theme was mirrored in a transformation from the increasing awareness of *Silent Spring* to the indignation of *People’s Rights*.

During the 1990s, the shift in scientific evidence towards reaffirming dioxin’s health effects facilitated additional changes in the two frames. Having realized that *Issue Management* was of limited value in the face of mounting evidence, industry began to offer *Better Living Through Chemistry* as a way of elevating the debate beyond toxic chemicals. In response (or in concert) the environmental justice movement kept certain elements of *People’s Rights* as it formed the more sophisticated *Poisoned Communities*.

The evolutionary path of these frames is, in and of itself, illustrative of their sponsors. From an environmental justice perspective, their frame evolution is characterized by the initial awareness of *Silent Spring* yielding to the outrage of *People’s Rights* followed by the sophistication of *Poisoned Communities*. This is essentially the same process which individuals undergo as they become transformed from average citizen to environmental activist.
From an industry perspective, frame evolution is seen as reflecting a reliance based upon what has worked in the past. While the shift from _Rational Trade Offs_ to _Issue Management_ can be seen as somewhat of a progressive development, industry’s return to the relative rigidity of _Better Living Through Chemistry_ does not bode well for a near term resolution of the controversy.

As a result of this frame standoff, the enduring nature of this controversy seems guaranteed as evidenced by the following case study.

### 8.3.2 Better Living Through Chemistry vs. Poisoned Communities

#### 8.3.2.1 Introduction

On May 16, 1995, the Parent Teacher Association (PTA) of Midway High School, located in Hewitt, Texas, passed a resolution advocating for the elimination of dioxin exposure. Following its adoption, this resolution was forwarded to the statewide Texas PTA for consideration at its annual meeting in November, 1995. Prior to its introduction at the annual meeting, however, industry advocates pressured for a significant rewording of the original resolution. The amended version was ultimately adopted at the statewide convention.  

This section examines this competition between resolutions as a struggle between frames and provides a tangible example of the importance of frames in public controversies.

#### 8.3.2.2 The Frames

A cursory analysis of the two resolutions quickly yields evidence of the underlying frames.

**Dioxin’s Toxicity**

<table>
<thead>
<tr>
<th>Midway:</th>
<th>Dioxin, the most toxic substance created by humans.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC:</td>
<td>There is no reference to the toxicity of dioxin in the CCC resolution.</td>
</tr>
</tbody>
</table>

---

*These two resolutions can be found, in their entirety, in Appendix B.*
Dioxin Formation
Midway: Dioxin is formed as an accidental by-product on numerous industrial processes involving chlorine;
CCC: 2,3,7,8-Tetrachlorobenzodioxin (TCDD) is formed as a by-product of both natural and man-made combustion and certain other processes.

Link to Chlorine
Midway: Dioxin is a by-product of waste incineration containing chlorine, chemical and plastics manufacturing, pulp and paper bleaching...
CCC: There is no reference to chlorine in the CCC resolution.

Health Risks
Midway: Current levels of Dioxin in the bodies of the general population are already in the range at which health effects are known to occur in laboratory animals...

...numerous adverse health effects such as cancer, hormonal disruption, infertility, impaired child development, suppression of the immune system, endometriosis, and diabetes,
CCC: The US Environmental Protection Agency (EPA) is currently conducting an exhaustive reassessment of the environmental and health effects of dioxin to determine whether a sufficient safety factor exists between background levels of dioxin and doses that cause adverse responses in laboratory animals;

Call to Action
Midway: ...PTA supports legislation and actions that decrease, phase-out, and eliminate the creation, release and exposure to Dioxin;

...PTA supports the use of alternative processes, technologies, and products that avoid exposure to Dioxin, especially those that are chlorine-free;
CCC: ...PTA strongly supports voluntary actions by all industries to work to characterize their emissions of TCDD and to work to reduce those emissions.

As was mentioned, this Midway High School resolution was adopted by a vote of 481 to 3 (King 1996:4). When put to a vote before the statewide PTA’s fourteen hundred delegates, the CCC resolution passed by seventy-two votes (ibid. 7).

8.3.2.3 Analysis
Given our previous discussion, it is apparent that the PTA version of the resolution is an example of Poisoned Communities. It is not a hard-line version, for while it stresses most of the key elements of this frame, it does
not advocate fundamental social reform nor does it necessarily call for an immediate ban on chlorine. The appeal to democracy associated with *Poisoned Communities* is, however, present by the very act of a Parent Teacher Association attempting to influence public policy. While there are other examples of weaker versions of the environmental justice frame, as well as more forceful depictions, one could classify the Midway resolution as a fairly balanced version of *Poisoned Communities*.

Similarly, the CCC-backed resolution is a solid example of *Better Living Through Chemistry*. It advocates sound science, measured approaches and voluntary actions on the part of industry, essentially maintaining the status quo. In keeping with the relative balance of the Midway resolution, the CCC version avoids forecasting dire economic consequences if its resolution is not passed. As such, the CCC resolution can be seen as an even-handed depiction of *Better Living Through Chemistry*.

In analyzing this particular case study, however, one must do so in light of the current balance of power between *Poisoned Communities* and *Better Living Through Chemistry*. This thesis indicated that *Better Living Through Chemistry* dominates the public discourse. As such, the outcome of the Texas PTA vote may be seen as another victory for the chemical industry. While industry would have probably preferred not to have had any dioxin resolution brought before the convention, I would anticipate that the adopted version meets with their satisfaction.

This case can also be taken as a reflection on the broader debate and the evolution of strategies. In this instance, a reasonable version of *Poisoned Communities* lost out to a reasonable version of *Better Living Through Chemistry*. This then begs the question as to what to expect from each group during the next engagement.

Would one expect the environmental justice movement, given this localized setback, to come out with a more watered-down version of *Poisoned Communities*? Accordingly, given this victory, how realistic would it be to
expect sponsors of *Better Living Through Chemistry* to modify their stance. My sense is, that both sides will see what they want to see from this experience. The environmental justice movement, having tried a measured and reasonable approach, has no other alternative but to increase the intensity of the rhetoric. In addition, the chemical industry, seeing the narrowness of their victory, would most likely adopt a more aggressive position to in an attempt to prevent similar resolutions from ever reaching the floor.

This essentially takes us back to where this thesis began. Frame-based controversies are not resolvable. Victory is wholly dependent upon public opinion. As such, the following section contains a strategic analysis of the current strategies employed by the environmental justice movement and their Stop Dioxin Exposure Campaign.

### 8.3.2.4 Strategic Analysis

As evidenced by the Texas PTA study, the dioxin controversy of the 1990s pits dominant *Better Living Through Chemistry* against its *Poisoned Communities* challenger. While some members of the environmental community and industry have engaged in preliminary discussions in the search for common ground, this is not a viable option for the sponsors of these two competing frames:

> ...The fringe activists are always going to be out there, and they're going to be bashing us, and we probably will react the same way we did in the past (Hirl in Hileman, 1994).

The goal, therefore of *Poisoned Communities* is to mainstream the fringes: this is the mission of the Stop Dioxin Exposure Campaign. By appealing to culturally resonant ideals, *Poisoned Communities* needs to counter industry's dominant frame. From a strategic based perspective, recall that it is impossible to falsify a frame. As such, effort is better spent taking advantage of the weaknesses inherent in a competing frame.
The fundamental tenet of *Better Living Through Chemistry* is the use of the elite tools of science. Risk assessment, cost-benefit analysis, ‘sound science’ are all implements of the resource-rich sponsors of *Better Living Through Chemistry*. The rational decision-making process advocated by its sponsors is wholly based on expert decision-making (i.e., risk assessments and cost-benefit analyses) and excludes the public from meaningful participation.

The potential weakness with this strategy, however, is that *everybody* is effected by the decisions being made on how toxic chemicals are regulated. Accordingly, challenging frames that advocate strong links to democratic principles would seem to be able to capitalize on this fundamental weakness. This is, in essence, exactly what the Stop Dioxin Exposure Campaign is doing:

We have to explore how people became powerless as the corporations became powerful. We have to discuss why our government protects the right to pollute more than it protects our health. We have to figure out how to speak honestly and act collectively to rebuild our democracy (Gibbs 1995:xxi).

Democracy is a culturally resonant theme that strikes at the very heart of American society. The democratic process seems like an Achilles’ heel of the rational decision-making process designed by the *Better Living Through Chemistry* sponsors.

In addition, the issue of democratic rights is central to the ‘burden of proof’ argument. From the *Poisoned Communities* perspective, current practice holds that a chemical is assumed to be innocent until proven guilty. As a result, of the thousands of chemical compounds currently on the market, only a small fraction have been thoroughly evaluated for their human and ecosystem health effects. *Poisoned Communities* attempts to construe this as a violation of individual rights, demanding that instead, a chemical is guilty until proven to be innocent. By shifting the burden of proof on to industry, *Poisoned Communities* battles the notion that we are essentially “200 million guinea pigs.”

This analysis is not to be thought of as breaking new ground, for the environmental justice movement and the Stop Dioxin Exposure Campaign
have been long championed the fundamental issues of rights and democracy. This discussion, however, simply serves to highlight, from a frame-based perspective, the potential strategic importance of such an approach.

8.4 Chapter Summary

In seeking to strengthen its Stop Dioxin Exposure Campaign, the environmental justice movement needs to both gain new, external support as well as reinvigorate its existing members. Only by accomplishing these two objectives will the movement be able to effectively challenge the strong Better Living Through Chemistry frame which dominates the mass media.

To attract individuals, the continued use of frame bridging is recommended. Existing voluntary associations, however, are more amenable to frame extension strategies and the movement is encouraged to investigate the possibility of such a strategy with the AARP.

However, this campaign building takes place in light of inherent institutional impediments. The implicit hurdles include competing definitions of the dioxin problem and the limited carrying capacity of the mainstream media. As such, the Stop Dioxin Exposure Campaign needs to attract the necessary attention while at the same time preventing issue burn-out.

Poisoned Communities and Better Living Through Chemistry are the latest in a long line of competing frames, having gotten their initial start around the publication of Silent Spring. Since then, they have both ebbed and flowed in response to the quality and quantity of scientific evidence as well as the temperament of their sponsors.

Currently, Poisoned Communities and Better Living Through Chemistry are waging a very public and highly charged battle, as evidenced by the Texas PTA case. An analysis of this case reveals the fundamental intransigence of frame controversies. As such, it is expected that the dioxin debate will endure for some time to come.
9. CONCLUSIONS

As mentioned in the introduction, researching this thesis was an attempt to satisfy the following three objectives:

i. to demonstrate that the dioxin controversy is a conflict between frames;

ii. examine how the frames have evolved over time and how each has shifted in response to the strategies implemented by its opponent; and,

iii. to analyze, from a framing perspective, the strengths and weaknesses of the environmental justice movement’s current campaign.

With regard to the first objective, the dioxin debate can clearly be seen as the result of two opposing frames: the dominant frame sponsored by the chemical industry and the challenger frame offered by the environmental justice movement. While the former is grounded in the objective use of risk assessment, cost benefit analysis and sound science, the latter is rooted in the principles of equity and democracy. Accordingly, the sponsors and participants in the debate have used these frames as lenses through which to view the world and to shape public opinion and policy.

Much of this thesis was spent discussing the public nature of this controversy, particularly concerning the role of frames in social movements. The environmental justice movement is one such movement. Given the public nature of the dioxin debate, the dominant frame is in a position of power as it provides the filters through which the populace views the controversy. Given that the environmental justice movement (exemplified by CCHW and the Stop Dioxin Exposure Campaign) relies heavily upon public opinion and support in an effort to further its goals, it is crucial that the movement adopt a frame that culturally resonates with its target constituents.
Competing for public opinion, however, is a difficult undertaking as there are significant hurdles that need to be overcome before individuals align themselves with a particular frame. These impediments are both personal and institutional as well as being the direct byproduct of opposing frames which are competing for the same finite resource. As such, frames evolve over time in an effort to remain relevant and attractive to both current participants and potential supporters.

In an attempt to understand the current dioxin-related frames, this research undertook a survey of the two principal frames. This study was divided into three time periods (1960-1980, 1980-1990 and 1990-1995). By dividing the research in this way, we were able to see the evolution of the frames in relation to the emergence of the environmental justice movement. As such, the rude awakenings of Silent Spring were seen to give way to the anger of People's Rights followed by the more sophisticated strategies inherent in Poisoned Communities. From an industry perspective, the initial resistance of Rational Trade Offs was momentarily replaced by the more progressive Issue Management before being supplanted by Better Living Through Chemistry.

While the study of frame evolution was useful in setting the context for the analysis, this research was focused on the relative dominance of Better Living Through Chemistry vs. Poisoned Communities. Accordingly, a three-year survey of newspaper articles reveals that while the two frames are evenly depicted in the mass media, the stronger version of Better Living Through Chemistry appears approximately eight times as often as the strong version of Poisoned Communities. As such, Better Living Through Chemistry is seen as the dominant frame in the dioxin controversy.

In challenging the dominant frame, the environmental justice movement has indeed succeeded, through Poisoned Communities, in raising the public's awareness of the dioxin issue. However, as demonstrated by the relative infrequency in which the strong, action-oriented version of Poisoned
Communities is portrayed in the media, the movement needs to focus its energies on mobilizing popular support.

This interpretation of this ‘state of the frames’ is consistent with the current activities of the Stop Dioxin Exposure Campaign, as the most recent Citizen’s Conference, was entitled A Time For Action. In seeking to strengthen its Stop Dioxin Exposure Campaign, the environmental justice movement needs to both gain new, external support as well as reinvigorate its existing members. Only by accomplishing these two objectives will the movement be able to effectively challenge the strong Better Living Through Chemistry frame which dominates the mass media.

To attract this support, various frame alignment processes need to be understood and the Poisoned Communities frame may have to undergo slight modifications to incorporate potential constituent needs. In addition, this outreach takes place in a competitive environment in which Better Living Through Chemistry is also competing for support while simultaneously attacking certain elements of Poisoned Communities. This dynamic was illustrated in the case of the Texas PTA.

As such, the environmental justice movement and the Stop Dioxin Exposure Campaign need to target their energies on Better Living Through Chemistry’s inherent weakness. The foundation of Better Living Through Chemistry rests upon the use of ‘sound science.’ This is a powerful tool for it frames the debate in a reality dominated by Better Living Through Chemistry. However, ‘sound science’ is undemocratic in nature, a phenomenon that plays directly into the hands of the environmental justice movement and the Stop Dioxin Exposure Campaign. It is in on this sub-level of frame competition where Better Living Through Chemistry is most vulnerable and where the Stop Dioxin Exposure Campaign has its greatest potential to shift the terms of the debate onto a more suitable playing field.
APPENDIX A

THE PEOPLE'S BILL OF RIGHTS
PEOPLE'S BILL OF RIGHTS

People in this country have the right to be safe and secure in their homes and workplaces. We have the right to bring up our children and live our lives free from harm imposed by toxic substances that have been brought into our communities, neighborhoods, workplaces, schools and farms by others, without our knowledge and without our consent. We have the right to clean air, clean water, uncontaminated food and safe places to live, work and play. We have the right to require our government to be accountable and industry to be responsible. We have the right to action and to public policy which will restore to us that which has been taken away and to stop the needless and unjustifiable attack on our lives, families, homes, jobs and future that come from the imposition of toxic substances in our environment.

- **RIGHT TO BE SAFE FROM HARMFUL EXPOSURE.** People have the inherent right to be safe in their homes and workplaces. Our children have the right to grow up strong and healthy, not diseased, deformed or to die before they've had a chance to live, to be safe in their schools, free from cancer-causing asbestos or other hazards, and to play in their backyards free from erupting chemical pits or contaminated soils. We have the right to be free from exposures, imposed on us against our will, to poisonous substances that can cause birth defects, cancer, sterility, genetic damage, miscarriages and still births.

- **RIGHT TO KNOW.** We have the right to know what poisons other people, industry, corporate polluters and government have decided to bring into our neighborhoods and workplaces and the right to know how these chemicals can adversely affect our health, our environment and exactly what they intend, if anything, to do about it.

- **RIGHT TO CLEAN UP.** We have the right to safe, total cleanup of hazardous waste sites and spills, to have the cleanups take place quickly with our neighborhoods, homes and environment restored to the way it was before the polluters chose to contaminate them with chemical poisons.

- **RIGHT TO PARTICIPATE.** We have the right to participate, as equals, in decisions affecting our lives, children, homes and jobs on the matter of exposure to hazardous wastes. We have the right of access, without cost, to information and assistance that will make our participation meaningful and to have our needs and concerns be the major factor in all policy decisions.

- **RIGHT TO COMPENSATION.** We have the right to be compensated for damages to our health, our homes and our livelihoods. The responsible parties must compensate us for the cost of cancer treatments, care of our birth-defected children, the loss of our farms and jobs, livestock and the burial of our loved ones.

- **RIGHT TO PREVENTION.** We have the right to public policy that prevents toxic pollution from entering our neighborhoods by using existing technology beginning with reduction at the source—a technology that will provide jobs, business opportunities and conservation of valuable resources. Our workers have the right to safety equipment and other safety measures to prevent their exposure in the workplace.

- **RIGHT TO PROTECTION AND ENFORCEMENT.** We have the right to strong laws controlling toxic wastes and vigorous enforcement of those laws, not backroom, sweetheart deals. If a child dies from exposure to chemical poisons in the environment, someone must be arrested and prosecuted for manslaughter.

By the Citizens Clearinghouse for Hazardous Wastes, P.O. Box 926, Arlington, VA 22216, (703) 276-7070
APPENDIX B

THE TEXAS PTA AND CCC RESOLUTIONS
DIOXIN - did you know?

RESOLUTION

This Dioxin Resolution was adopted by the MHS PTA Executive Board on May 16, 1995. It now moves forward to the general body and is on the Business Agenda at the September 19 Business Meeting and Open House. Voting/Membership cards are required.

Whereas, Dioxin, the most toxic substance created by humans, is formed as an accidental by-product in numerous industrial processes involving chlorine; and

Whereas, Dioxin is persistent in the environment, food chain, and in our bodies, and

Whereas, Dioxin is a by-product of waste incineration containing chlorine, chemical and plastics manufacturing, pulp and paper bleaching, and burning hazardous wastes in cement kilns; and

Whereas, Dioxin is cross-generational, passing from mother to child through the placenta and via mother’s milk; and

Whereas, the creation of Dioxin is an avoidable hazard creating numerous adverse health effects such as cancer, hormonal disruption, infertility, impaired child development, suppression of the immune system, endometriosis, and diabetes; and

Whereas, children typically bear the highest exposure to Dioxin, and

Whereas, according to EPA studies, current levels of Dioxin in the bodies of the general population are already in the range at which health effects are known to occur in laboratory animals, and

Whereas, some communities are subject to even greater exposures and health risks because of disproportionate siting of polluting facilities in minority communities; and

Whereas, wildlife are now suffering severe effects on reproduction and development, now therefore be it Resolved, that Texas PTA supports legislation and actions that decrease, phase-out, and eliminate the creation, release, and exposure of Dioxin, and be it further Resolved, that Texas PTA supports the use of alternative processes, technologies, and products that avoid exposure to Dioxin, especially those that are chlorine-free; and be it further Resolved, that this Resolution be forwarded to the National PTA for consideration.

Submitted by Midway High School PTA, Hewitt, TX
Kim Phillips, President

Concern about Dioxins has been expressed to US EPA by over 338 groups including:

RATIONALE

What is Dioxin?

Dioxin is an unwanted by-product of many chemical, manufacturing, and combustion processes. Any use of chlorine in industrial processes, including incineration, chemical and plastics manufacturing, paper and pulp bleaching, burning hazardous waste in cement kilns, results in dioxin formation.

Dioxin is the group name for many persistent, very toxic chemicals. The most toxic form of dioxin is 2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD. The toxicity of all dioxin and dioxin-like substances are measured against TCDD. There are 75 chlorinated dibenzo-dioxins. Seven have TCDD-like toxicity. There are 135 chlorinated dibenzo furans. Ten have TCDD-like toxicity. There are 209 chlorinated biphenyls (PCBs). Thirteen have TCDD-like toxicity. There are also brominated dibenzo dioxins, dibenzo furans, and biphenyls that have TCDD-like toxicity.

How are People Exposed to Dioxin?

Dioxin, called by many "the most toxic substance created by humans", does not break down easily in the environment; it bioaccumulates. The body accumulates any dioxin to which you are exposed. Over time, continual low level exposures build up until adverse health effects begin to occur.

Human exposure occurs through diet, with foods from animals being the predominant pathway. Animals are exposed primarily from dioxin emissions that settle onto soil, water and plant surfaces. Soil deposits enter the food chain by ingestion by grazing animals.

People then ingest dioxin through meat, dairy products, fish and eggs they consume. One expert estimates that the average daily intake of dioxin is "at least 50 times greater than what EPA estimates is a virtually safe dose of dioxin".

People with the highest exposures eat more fish, may live near a dioxin source or eat food produced near a dioxin source. Children and breast fed babies receive the greatest exposure because of the smaller size of their bodies.

Exposure to Dioxin is a Significant Public Health Issue

EPA released a 6-volume, 2,400 page "Dioxin Reassessment" in late 1994. This report states that levels of dioxin currently existing in humans have reached a body burden that will cause adverse health affects such as cancer, reproductive and hormonal disruptions, birth defects, impaired child development, diabetes, altered male sexual behavior, immune system suppression, and many others. Vietnam veterans were exposed to dioxin, "Agent Orange" during the Vietnam war. Times Beach, Missouri and Love Canal are the other two events that triggered national attention on the dioxin issue - these three events are within the background materials.

Exposure to Dioxin is AVOIDABLE

Exposing our children to dioxins can be avoided by passing state and federal rules, regulations, and supporting alternative actions that decrease, phase out, and eliminate the use of chlorines in industrial processes and phase out burning of chlorinated wastes at existing combustion facilities.

Young mothers should not have to fear breast-feeding their own children! Over 340 different organizations in the USA have requested that EPA take immediate action to protect our children, our health and environment. PTA should lead the way on this public health issue of the decade.

This Dioxin resolution meets the objects of Texas and National PTA, will benefit ALL children, is national in scope, is feasible, is a new position.
RESOLUTION

Whereas, 2,3,7,8-Tetrachlorodibenzodioxin (TCDD) is formed as a by-product of both natural and man-made combustion and certain other processes; and,

Whereas, The US Environmental Protection Agency (EPA) is currently conducting an exhaustive reassessment of the environmental and health effects of dioxin to determine whether a sufficient safety factor exists between background levels of dioxin and doses that cause adverse responses in laboratory animals; and,

Whereas, Actions taken by EPA and others in the last twenty years have caused levels of TCDD in the environment to decrease; and,

Whereas, Further reduction in exposure to decreases in background levels of dioxin are to be desired; and

Whereas, Protection of our children's health is a priority to Texas PTA; Therefore, be it

Resolved, That the Texas PTA supports actions that reduce exposure of humans, wildlife and especially children to TCDD, and be it further

Resolved, That the Texas PTA strongly supports voluntary actions by all industries to work to characterize their emissions of TCDD and to work to reduce those emissions, and be it further

Resolved, That the Texas PTA strongly supports government, industry and other stakeholders participation in voluntary programs similar to TNRCC's Clean Texas 2000 and EPA's 33/50 program to significantly reduce emissions of other hazardous chemicals.

RATIONALE:

2,3,7,8-Tetrachlorodibenzodioxin, otherwise known as TCDD or simply "dioxin" has been extensively studied since the late 1960's. It has been proven to be a potent toxic agent, particularly to animals. While TCDD has been linked to cancer for more than a decade, the Science Advisory Board Review of EPA's recent Draft Dioxin Reassessment still notes that the studies of dioxins in humans are "limited" and that dioxin should be characterized as "probably carcinogenic to humans" but there is not sufficient data at this time to call it a "human carcinogen."

Further questions about dioxin have been raised in the Dioxin Reassessment and elsewhere. Questions regarding noncancer effects of dioxin ranging from neurotoxicity to developmental toxicity to actions that mimic hormones continue to arise. The EPA and
many scientists continue to assess the potential environmental and health effects of
dioxin, even as government and industry seek ways to reduce the risk of dioxin exposure.

Thus, the state of dioxin science and policy is complicated even for the experts.
Although opinions vary, the largest source of airborne dioxins listed in EPA's Draft Dioxin
Reassessment is medical waste combustion, followed in order by municipal waste
combustion, cement kilns, industrial wood burning, metal smelting, forest fires and diesel
engines.

The TPTA shall support ongoing actions taken by governments and various industries
to reduce exposure to dioxin in the environment. Furthermore, reduction of exposure to
hazardous materials in general is prudent. Significant progress has been made by industry
through such programs as the TNRCC's Clean Texas 2000 which promotes recycling
and reduced emissions or EPA's 33/50 program, which called for reductions in fifteen of
the largest volume emissions by 33 percent between 1989 and 1992, and by 50 percent
between 1989 and 1995. Many companies accepted the challenges and met the goals.

Ultimately the goal is reduction of risk to humans—especially children—and wildlife.
PTA should support positive actions to accomplish this goal, so as to achieve continuous
improvement in the environment.


Schnaiberg, Allan. “Legitimating Impotence: Pyrrhic Victories of the Modern Environmental Movement”


