

Corporate Power and US Oil Dependence Policy Evolution under George W. Bush

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Submitted in accordance with the requirements for the degree of
Doctor of Philosophy (PhD)

The University of Leeds,
School of Politics and International Studies
June 2013

The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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Acknowledgements

I would like to express my deep gratitude to Dr Christine Harlen and Dr Charlie Burns, my research supervisors, for their guidance, their willingness to re-read my work and the useful critiques they provided that helped shape this research.

In the US, I would like to thank all of my anonymous interviewees who willingly contributed their time to make this research possible.

I would also like to extend my thanks to my fellow PhD students in Botany House for making the last four years so satisfying. Egle Cesnulyte, Simonida Kacarska, Faiz Sheikh, Simon Mabon, Gordon Clubb and Aijan Sharshenova, alongside many others, made coming to the office every day an enjoyable experience, provided intellectual stimulation and guidance, and were dependable comrades in my late night explorations of Leeds. Special thanks are also deserved by my partner, Valerie Zoz, for putting up with me.

Finally, I wish to thank my family for their support, love and encouragement throughout my many years of study, and for making this thesis a possibility.

Abstract

US oil dependence poses grave health, environmental and economic risks to the United States and its citizens. Yet, at the same time, several major corporations financially benefit from the oil dependent status quo. Through an investigation of how auto-manufacturers have been involved in the formulation, implementation and outcomes of both Corporate Average Fuel Economy (CAFE) standards and Hydrogen Fuel Cell research policy (the FreedomCAR partnership) under the administrations of George W. Bush this thesis argues that the representation of the interests of (primarily) the Big Three US automobile corporations resulted in the protection of the oil dependent status quo from major political change.

In this regard, this thesis investigates two interlinked questions: “why, over the past forty years, has the US not adopted a coherent energy policy to deal with its oil dependence?” and “how are corporations powerful in the US?” Focusing mainly on the latter question to explain the former, the thesis has four main original contributions. First, it provides an analytical framework for understanding the power of a corporation working as a political actor which reconciles many diverse mechanisms of influence and that allows an understanding of how these mechanisms can reinforce and complement one another. Second, in applying the framework, it provides two original policy case studies, which are based upon data gathered during fieldwork in Washington D.C. and Ann Arbor, Michigan. Third, the thesis demonstrates the validity of a holistic focus upon policy evolution, rather than policy making, for understanding questions of power and influence; it demonstrates the need to return to broader analysis of “who governs?” – or Held and McGrew’s (2003, p.8) “Who rules, in whose interests, by what mechanisms and for what purposes?” – than is currently carried out in US interest group literature. Fourth, this thesis shows how corporate power in domestic politics is connected to the international consequences of US oil dependence and the world problems that such dependence exacerbates.

List of Abbreviations

AAM – Alliance of Automobile Manufacturers
ANWR – Alaskan National Wildlife Refuge
BCRA – Bipartisan Campaign Reform Act
bpd – barrels per day
BTS – Bureau of Transportation Statistics
CaFCP – California Fuel Cell Partnership
CAFE – Corporate Average Fuel Economy
CARB – California Air Resources Board
CEI – Competitive Enterprise Institute
CRADA – Cooperative Research and Development Agreement
CVC – Coalition for Vehicle Choice
DOE – Department of Energy
DOT – Department of Transport
EERE – Energy Efficiency and Renewable Energy
EIA – Energy Information Administration
EISA – Energy Independence and Security Act
EPA – Environmental Protection Agency
EPCA – Energy Policy and Conservation Act
ESG – Executive Steering Group (FreedomCAR)
FEC – Federal Election Commission
FECA – Federal Election Campaign Act
GAO – Government Accountability Office
GDP – Gross Domestic Product
GHGs – Green House Gases
HFC – Hydrogen Fuel Cells
HTAP – Hydrogen Technical Advisory Panel
ICE – Internal Combustion Engine
LCD – Litres per capita per day
mpg – miles per gallon
MY – Model Year
NAS – National Academy of Sciences

NEPDG – National Energy Policy Development Group
NHTSA – National Highway and Traffic Safety Administration
NiMH – Nickel Metal Hydride
PAC – Political Action Committee
PEM – Proton Exchange Membrane
PHEV – Plug-in Hybrid Electric Vehicle
PNGV – Partnership for a New Generation of Vehicles
OPEC – Organisation of Petroleum Exporting Countries
SUV – Sports Utility Vehicle
ZEV – Zero Emission Vehicle

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“In practice it is impossible for the modern state to maintain an independent control over the decisions of big business. When the state extends its control over big business, big business moves in to control the state.”

Aneurin Bevan

Chapter 1 – Oil Dependence: An Introduction

At the heart of this thesis are two inter-linked problems. The first, a real-world issue, is the continued and growing American dependence on oil, and the many geopolitical, health and environmental problems stemming from such dependence. The second problem is the power of corporations within America and their capacity to have their interests represented in the process of policy evolution. The link between these two problems is that if corporations who profit from oil dependence are powerful then there is a possibility that these corporations will use their power to protect the profitable status quo (with high levels of oil consumption) against government intervention, and so ensure that the US remains dependent upon oil.

Both of these interlinked problems were prominent during the presidency of George W. Bush. Oil dependence was a major issue upon which the Bush administration introduced several policies and which was high on the national radar due to the continued rise in the price of oil from 2003 onwards. In a slightly different manner, corporate power was noticeable during Bush's tenure due to the media discussion of links between the administration and major corporations – particularly oil corporations (Dye et al., 2011 pp.86-87). It is because of the prominence of both of these issues during Bush's terms that this time period is the primary historical focus of this thesis.

The importance of studying just one of these interlinked problems on its own is difficult to overstate. American oil dependence, as this chapter explains, is linked with climate change, US foreign policy and the health of the US economy, among several other important factors. Equally, corporate power ties into many contemporary political debates concerning the constitution of US society – there are debates about issues such as genetically-modified organisms, internet governance and the obesity epidemic that corporations are very involved in – and basic normative concerns about the role of private authority in democratic society. In dealing with these major issues, this research is important on both democratic normative grounds and practical, problem-solving grounds. Moreover, while the research focuses on the US, its analysis can possibly be of use for understanding corporate power around the world.

Yet, despite the importance of these topics there is a relative dearth of studies

covering either of them, and none on how they intersect. Instead, oil dependence has generated a literature that focuses upon the geopolitical consequences of US oil dependence (i.e. Bromley, 2005, Klare, 2005, Yergin, 2006), but does not explore the domestic politics that have created and continued US oil dependence. Similarly, the issue of corporate power in the US has not been a particular focus of research (Drutman, 2010, Miller and Mooney, 2010, Mosley and Singer, 2009) and instead questions about corporate power in the US have been subsumed in wider questions of interest group influence (Hart, 2004). This lack of specific attention to the power of business is reflected by Graham Wilson (2006 p.33), who said “there are about a hundred political scientists studying parties and elections for every one studying business and politics.” Similarly, Wilks (2013 p.1) notes “The business corporation is arguably the most influential and least studied institution in contemporary political life”. This research thus explores an intersection between two literatures that both largely overlook the areas where the intersection occurs. The lack of research into the intersection allowed this research to simultaneously uncover new empirical material and to analytically innovate. Analytical innovation was also allowed by the adoption of an iterative-parallel emergent research design, which is where the analytical framework is refined and sharpened during data collection and by the data collected, rather than (as in a deductive design) the analytical framework specifying the data collected.

The lack of research also meant that while there are two inter-linked problems that are central to the thesis it was necessary to focus upon one problem that can be explored in greater depth as part of a study of the other. So, the primary focus of this research is investigating corporate power in the context of oil dependence; corporate power will be explored in political situations that contribute to, or could see the reduction of, oil dependence. The thesis, then, only touches upon the construction of US oil dependence, but studies corporate power in greater depth. In light of this focus, this chapter serves to first unpack oil dependence as the background to this study before explaining how this background gives direction and structure to the thesis.

Oil Dependence

“Keeping America competitive requires affordable energy. And here we have a

serious problem: America is addicted to oil, which is often imported from unstable parts of the world.”

George W. Bush, State of the Union 2006

On the 28th August 1859, in Titusville, Pennsylvania, Edwin Drake successfully drilled the first oil well in the US. Since this point, America has slowly, but surely, built up an insatiable appetite for “black gold” and oil has come to be an essential component of the American way of life. Oil seeped into everyday life by way of plastics and petrochemicals. It also powered the planes, tanks and ships that allowed the US to emerge as a global hegemon after the Second World War. But, most importantly, it gave first the rich, then the everyday citizen, the freedom of the open road, with sales of private automobiles rising from 2.2 million in 1930 to 11.5 million in 1969 (Wards Automotive, 2012).

In 1973, however, the dynamics that had propelled the oil revolution were upset as the Organisation of Petroleum Exporting Countries (OPEC) started an embargo against the US. OPEC’s embargo had the effect of quadrupling world oil prices and of keeping oil prices high throughout the 1970s (Keohane, 1984). In addition, the Iranian revolution of 1979 caused world oil prices to rise even higher and ensured high oil prices until 1986. This period of high oil prices was in part responsible for the worldwide economic downturn and the stagflation that plagued world economies during this period (Hamilton, 2003) and which gave rise to the neoliberal victories of both Ronald Reagan and Margaret Thatcher (Soederberg et al., 2005 p.9).

Because of the increase in the price of oil, since 1973 there have been numerous attempts to reduce America’s consumption of oil. Each of the three Presidents of the 1970s committed himself to reducing oil consumption as part of ending the “energy crisis”. During this period the Corporate Average Fuel Economy (CAFE) standards, a 55 mile-per-hour speed limit on interstate highways, and biofuel subsidies were all introduced, and both the Department of Energy and the Strategic Petroleum Reserve were created (Yergin, 1991). Jimmy Carter (1977), the President most committed to energy reform, even declared oil consumption restraint “the moral equivalent of war” as he built on the success of his predecessors in reducing US oil consumption. By 1985 the US had reduced its consumption to 15.7 million barrels per day (bpd) from 1973’s 17.3 million bpd (Energy Information Administration, 2010a).

However, while total crude oil usage was cut, the cuts were mostly achieved by reducing the use of oil for large-scale power generation, industrial processes and residential heating and power generation. In contrast, and in spite of the introduction of CAFE standards, the use of oil for transportation actually grew during this period as more and more Americans owned cars and drove further (Bureau of Transportation Statistics, 2009). This continued expansion of transportation's oil usage, alongside a decrease in the cost of oil starting in 1986, saw the beginnings of the reversal of the trend in overall declining oil consumption. Likewise, with oil prices low, policy inactivity from 1986 onwards was the norm. Brief oil price spikes and the sporadic activities in response to these spikes – such as the rise in the price of oil following the Gulf War and Clinton's Partnership for a New Generation of Vehicles – reaffirmed the continued salience of the issue, but in the main oil dependence had dropped off the political radar. The 1990s even saw a reduction in the fuel efficiency of vehicles on the road as ownership of lower-efficiency vehicles (particularly SUVs) grew (Campbell, 2005 p.954).

When George W. Bush came to power US consumption had grown again to 19.5 million bpd (Energy Information Administration, 2010a). At this point, the US, accounting for less than 5% of the world's population, consumed 25% of the world's production of oil. Put in other terms, in 2001 the US consumed around 1.13 trillion litres of oil, or 10 litres of oil per person, every single day (Central Intelligence Agency, 2009). A third of this consumption was satisfied by domestic oil production. Yet because US domestic oil production had peaked in the 1970s, and had been slowly declining ever since, further decreases in the domestic satisfaction of US oil consumption were predicted. The rest of US oil consumption in 2001, around 13 million bpd, was satisfied through imports from around the world.

This situation had created political concern about American "oil dependence" or America's "oil addiction". The main use of these phrases was by politicians concerned with the reliance of the US on other countries to provide vital oil supplies. In particular, there was (and is) concern about the US being reliant on oil imports from countries that are seen as hostile to US interests – a varied list that has recently included the majority of the Middle East, Venezuela and Russia (Engdahl, 2004 p.265) – which led to a policy of diversification of supplies and an emphasis on oil diplomacy outside of OPEC states. Moreover, such an understanding of oil

dependence is also utilised in the majority of the academic literature on US oil dependence, which has resulted in the marked international bias of the literature.

Yet understanding oil dependence as primarily an international issue misses many important domestic aspects of America's relationship with oil and many of the problems that come with this relationship (Greene and Tishchishyna, 2000 p.2). Put simply, American society is fundamentally premised upon the notion of continuing supplies of oil; it is an oil-dependent society that would cease day-to-day functions without oil. The primary way in which American society is premised on oil is that the vast majority of its transportation infrastructure can only be run using oil. So, whilst the US uses oil as a raw material in industrial manufacturing (involved in the production of agricultural fertilisers, plastics, detergents, etc) many of these oil-based products can be manufactured in a non-oil-based manner or have non-oil substitutes. However, with transport, oil is effectively non-substitutable (Goel, 2004 p.486); without substantial modification America's 300 million vehicles cannot run on anything but oil. In this respect, the US has experienced growth in its level of non-substitutable oil dependence, with the percentage of oil used by transportation having risen from 50.86% of the total US oil consumption in 1960 to 70.88% in 2008 (Bureau of Transportation Statistics, 2009).

It is worthwhile, then, to distinguish between the dependence of a society on oil and the reliance on imports engendered by this dependence: between oil dependence and import reliance. Moreover, with this distinction it is possible to see that oil dependence can be separated from import reliance; to see that oil dependence can exist without import reliance. For example, Britain, like most countries in the world, is oil dependent, but it has little import reliance because of North Sea oil satisfying the majority of demand. Figure 1-1 illustrates this point in the US.

Focusing only upon import reliance and the problems associated with it – which is what both the majority of oil dependence literature and the US political establishment does – misses many of the wider negative consequences and costs associated with oil dependence, and, by only partially analysing the problem, leads to partial solutions being adopted, such as diversification of supply.

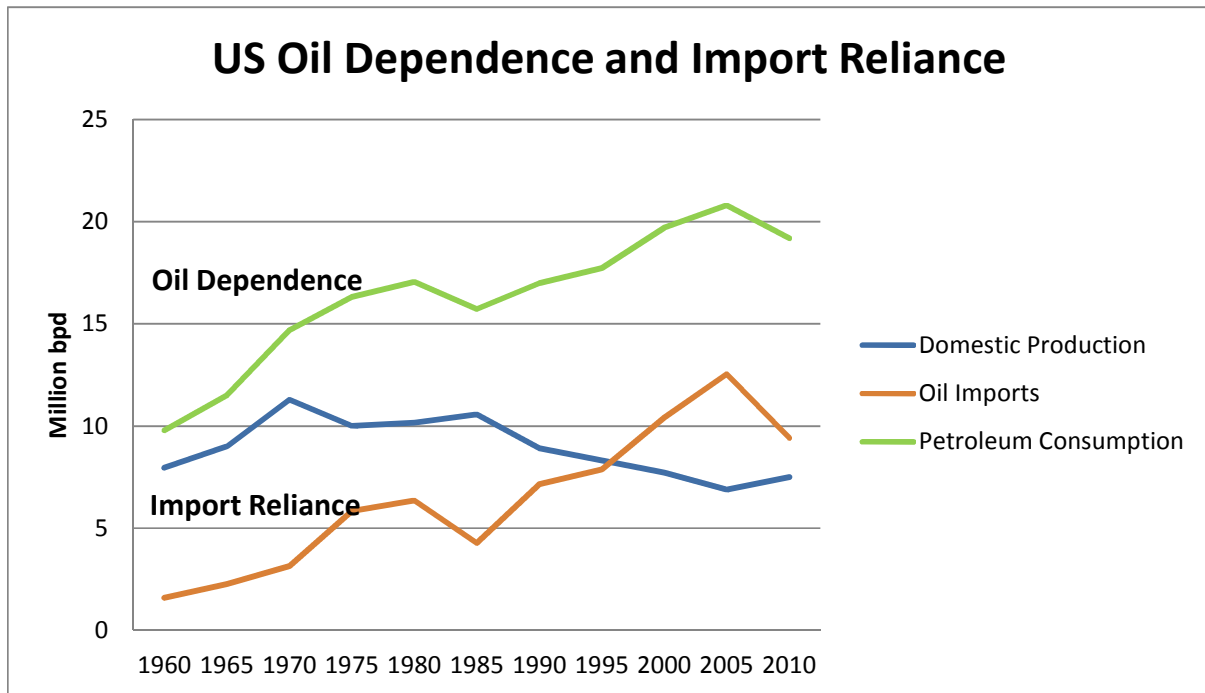


Figure 1-1: Difference between Oil Dependence and Import Reliance in the US

Source: Bureau for Transportation Statistics (2012)

So, with this broader understanding of oil dependence, the most direct and obvious cost of it is the cost of oil imports. In 2001 alone the US spent \$74 billion on oil imports (US Census Bureau, 2012). In fact, between 1970 and 2005 the cost of US oil imports has been estimated at standing at \$8 trillion in 2005-adjusted dollars (Greene, 2005 p.45). Because of the large cost of oil imports, importing oil was also responsible for a large proportion of the US trade deficit; during the Bush administrations oil imports were responsible for between a third and half of the total annual trade deficit (The Economist, 2010). This cost cannot be avoided by policies focused upon import reliance – diversification of supply, for instance, is unlikely to reduce the cost of oil imports.¹

Such is the volume and cost of oil imports that changes to the price of oil have significant effects on the US. Even a \$1 increase in the price of a barrel of oil has a large impact on the cost of funding US oil dependence (Lugar and Woolsey, 1999 p.89) as the US has imported 8.5-12.5 million barrels of oil a day since 2000 (Bureau of Transportation Statistics, 2012). Additionally, in contrast to the majority of the period 1986-2003, where the price of oil remained below \$25 a barrel, the cost of oil

¹ The price of oil is set on a global basis (although with regional and quality variations) and, due to the inelasticity of oil demand, is primarily determined by the level of supply.

has been at a level above \$25 a barrel since 2003. In fact, after several years of the price of oil rising, the price reached \$148 a barrel in summer 2008; a historic high. Since the post-2008 price crash oil has not returned to its previous price band and has remained above \$75 a barrel (Energy Information Administration, 2010b).² Throughout the Bush period this direct cost of oil dependence thus increased significantly.

Moreover, such increases in the price of funding oil dependence appear to be inevitable in the future due to two factors. First, developing states, such as China and India, are rapidly increasing their consumption of oil and placing additional demand on the international oil markets, and are likely to continue to do so (Yergin, 2006). Second, oil is a finite and non-renewable resource that human society is consuming in large amounts, which means, if societies continue to be reliant on oil, oil must run out. Before it does, however, the supply of oil will become increasingly constrained and prices will consequently rise.

Beyond the cost of oil imports, the use and production of oil also has a negative impact on the environment. As well as major and well-publicised oil spills, such as Exxon Valdez and Deepwater Horizon, that have destroyed entire aquatic ecosystems and ruined pristine tourist areas (Jernelöv, 2010), there are many minor leaks that occur throughout the process of getting oil from drill to its end use; small, and not so small, amounts of oil are regularly spilt at drilling rigs, from oil tankers, from oil pipelines, at oil refineries, from tanker trucks, at petrol stations and from automobiles (Tamminen, 2006 pp.28-45). As oil is toxic to animals and plants these oil spills, while small, cumulatively have a large negative impact on the environment and the biosphere (Owens, 2002 p.116).

In addition, the use and production of oil emits greenhouse gases (GHGs) that contribute to anthropogenic climate change. The US Department of Energy estimates that for every gallon of oil-derived fuel used 25 pounds of GHGs are released; resulting in the collective total for all US vehicles being 20 billion tons of GHGs released every day (Tamminen, 2006 p.41). In fact, the US transportation

² At the time of writing, the two benchmark oil prices – West Texas Intermediate and Brent (from the North Sea) – have a large gap in prices, with West Texas Intermediate being cheaper despite its slightly higher quality. While these two prices have historically moved together, there is lower-than-expected yield from the North Sea and an increase of supply in the US. Most notably, the West Texas Intermediate price has been affected by the boom in the use of oil shale (Terazono, 2012). Oil shale is also partially responsible (alongside the continuing high price of oil) for the 2010 changes in fig. 1-1.

sector alone accounts for 1/15th (6.6%) of global GHGs emissions (Greene and Plotkin, 2011). Thus, American transport, as well as being responsible for a majority of US oil imports, is also a major contributor to climate change (Elkind, 2010 pp.128-129). During the Bush period, however, recognition of these issues as part of debates on oil dependence was resisted, as members of Congress preferred to “focus exclusively on energy security issues and disregard the effects for climate change, trying to keep it off the agenda” (Bang, 2010 p.1649). In fact, the focus on energy security came to the active detriment of environment concerns, with deep sea drilling being used to increase the supply of oil at the risk of damaging the marine biosphere (spills on land are usually less damaging to the biosphere) (Fantazzini et al., 2011).

Further to the emission of greenhouse gases, America’s dependence on oil also encourages environmental damage around the world. Developing oil-producing countries often either have their National Oil Companies extracting oil in an environmentally damaging manner or have sufficiently lax environmental laws that allow supermajor³ oil companies to operate in a manner that pays little attention to environmental damage caused – as Shell and Texaco are accused of doing in Nigeria and Ecuador respectively (Boele et al., 2001 p.77, Kimerling, 1990 pp.849-850). While the damage may occur elsewhere, the impetus for environmental damage in oil-producing countries is partially provided by the American demand for oil, and, in a number of cases, caused by US-owned companies.

A more recent manifestation of the impact of America’s dependence on oil creating environmental damage in other countries, and an example of how an understanding of import reliance as the only problem can produce poor partial solutions, is the utilisation of Canadian tar sands. Tar sands are deposits of degraded, low viscosity, crude oil mixed with sand and other debris, which require a large amount of processing, mainly involving the intensive use of steam, to reach the standard of conventional oil (Nikiforuk, 2010 p.11). The extraction and processing of these sands destroys large swathes of land, pollutes water and, due to the energy intensity of the refining process, “contributes considerably more carbon emissions than oil from U.S. (or many other foreign) wells” (Hakes, 2008 p.108). The scale on which the tar sands

³ The supermajor oil companies are BP, Chevron (includes Texaco), ExxonMobil, Royal Dutch Shell, Total and ConocoPhillips. These six corporations are the largest privately-owned oil companies in the world.

industry operates is staggering, with one of the tailing ponds that stores waste water – which is so toxic that propane cannons are fired to scare away waterfowl from potentially (and fatally) landing on it – being the largest manmade structure on earth (Nikiforuk, 2010 p.82). The majority of the oil produced from these sands goes to the USA and has served as an important part of diversification to mitigate the problem of import reliance.⁴

As well as an environmental cost, the use of oil, particularly for transport, can also be seen to bear a direct human cost. Air pollution caused by the use of oil has been linked with “increased risk for multiple adverse health effects including asthma and allergic diseases, cardiac effects, respiratory symptoms, reduced lung function growth, adverse reproductive outcomes, premature mortality, and lung cancer” (Samet, 2007 p.1026). Reflecting such concern, a sign at every gasoline station in California (Tamminen, 2006 p.27) states “chemicals known to the state to cause cancer, birth defects, or other reproductive harm are found in gasoline, crude oil, and many other petroleum products and their vapors, or results from their use.” Equally, although much more difficult to avoid with alternative transportation systems, is the accidents that come from the use of transport facilitated by oil; with around 37,500 people killed and 2.2 million people injured in traffic accidents in the US in 2008.

While these costs are not unique to the US, the level at which they occur is far higher than other developed countries. This difference can be seen in the American consumption of transportation fuels, which reflects both the amount of driving done by Americans that own cars and the sheer number of cars Americans own. In 2006, the US consumed 6.49 litres per capita per day (LCD) of transportation fuels. In comparison Japan consumed 2.18 LCD (which was 33.6% of American consumption), the UK 2.84 LCD (43.7%) and Germany 2.37 LCD (36.4%). Even compared to similarly-developed countries that also have the disadvantages of low population density and large territorial areas US consumption was gluttonous; with Australian consumption being 4.2 LCD (64.8%) and Canadian consumption being 4.82 LCD (74.3%).⁵ As fig 1.2 shows, this situation is not new.

⁴ Tar sand oil is subject to extensive current debate in the US due to the plans to extend the Keystone pipeline, which carries the oil into and across the US.

⁵ Canada and Australia actually have population densities 10 times lower than the US, although population density statistics are somewhat skewed by large uninhabited areas in both countries.

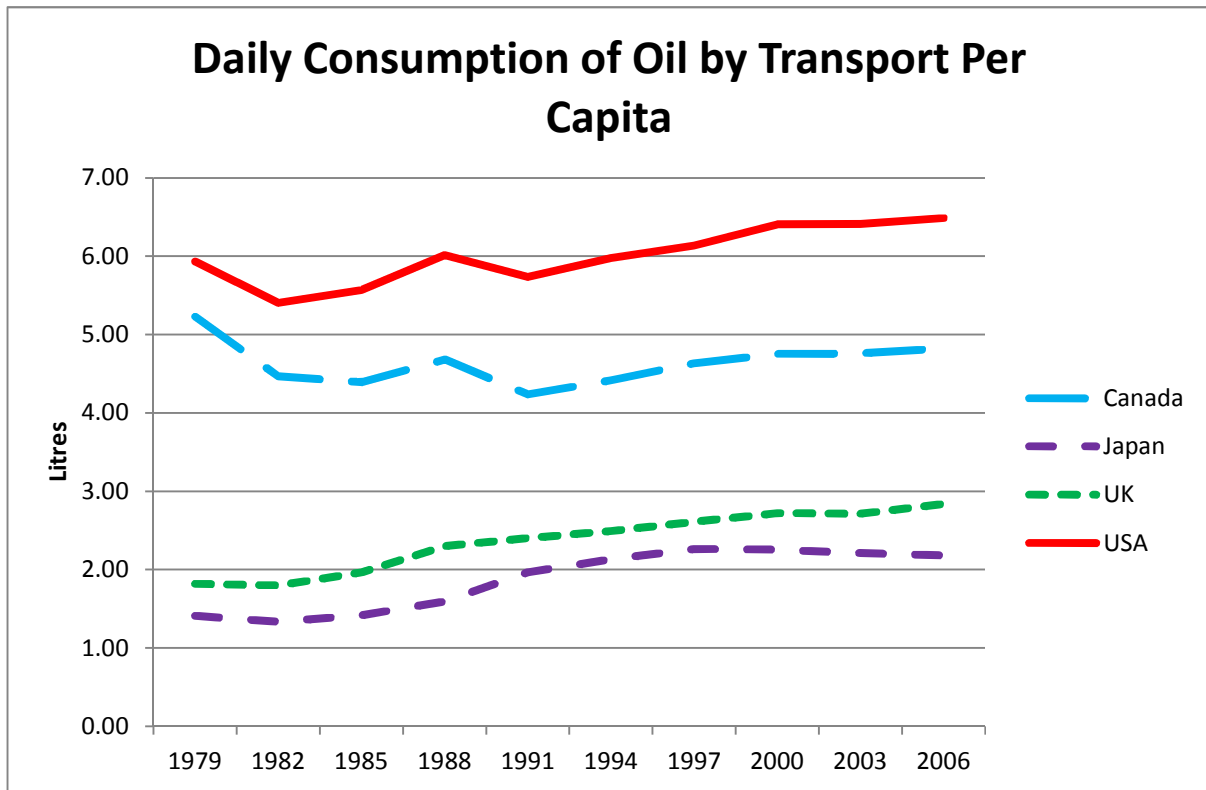


Figure 1-2: Daily Consumption of Oil by Transport per capita

Source: International Energy Agency (2009) & Author's Calculations

As such, American oil dependence is unique, poorly understood and related to many American, international and global problems. Therefore, understanding oil dependence and the reasons underlying the continuation of US oil dependence is vitally important for helping to understand many pressing problems facing the world today, particularly climate change.

Thesis Organisation

Considering the uniqueness of American oil dependence and its relation to serious national and international problems brings up many questions about the nature of the American politico-economic system and about the operation of American society.⁶ While there are many worthwhile questions, this thesis focuses on the politico-economic factors in particular as many of the problems are eminently political and because the issue of oil dependence has, at times, been given priority in the political arena. As such, the thesis is motivated by the question “Why, despite the numerous problems stemming from it and long periods of high-level political concern, have

⁶ Elements of American society's role in oil dependence have been discussed in a literature on the notion of “automobility” (e.g. Urry, 2004, Bohm et al, 2006, Seiler, 2008).

successive US administrations failed to enact policies that reduce oil dependence?” Put another way, “Why does the US not have a coherent energy policy?”

However, exploring such a wide question would require using an approach of broad historical analysis in which many important factors that lie in the details could be missed. Instead of such an approach, this thesis explores a small part of the wider neglected issue of oil dependence – the role of corporations in helping to maintain the oil-dependent status quo – and, in doing so, provides an account of some of the details that could be incorporated in a broader historical analysis. Moreover, focusing on the influence of corporations as individual political actors is particularly necessary as insufficient attention has been paid to the subject.

In light of these issues, this thesis is organised as follows. Chapter two serves to review the US interest group literature and makes the argument that the contemporary interest group literature has failed to offer a full account of corporate power that could be usefully deployed in understanding the role of corporations in US oil dependence policy. Contemporary US interest group theory is characterised as only exploring actions within the political arena, as simply understanding corporations as rich organised interests, and as limiting its focus to individual mechanisms of influence and so consequently lacking a central explanatory framework. Thus, in exploring the interest group literature chapter two serves to highlight the substantial gap within this literature that the thesis partially fills. It partially fills this gap by providing a theoretically-grounded analytical framework of corporations as political actors that is based upon three different forms of power, which can be used to understand both how different mechanisms of influence interact and how business actors can be powerful.

Chapter three outlines and constructs this framework in several steps. First, the chapter briefly explains how corporate power has been understood in the political economy literature and several mechanisms of influence highlighted by this literature. Second, the chapter outlines the community power debates (Dahl (1957), Bachrach and Baratz (1962) and Lukes (1974)) and explains a contemporary offshoot of this debate that divides power into its visible, hidden and invisible forms (Gaventa, 2006, VeneKlasen et al., 2007). Third, several mechanisms of influence identified in the interest group literature and some mechanisms from international political economy literature are organised and explained in the context of visible, hidden and invisible

power. Also, the tobacco industry is used to provide examples of such mechanisms working within a national context because it is the only industry to have undergone significant academic scrutiny of its actions, which was able to occur due to the release of documents as part of the 1998 Master Settlement Agreement (Proctor, 2012 p.15). In addition, the structure of the analytical framework is, and some of the mechanisms of influence highlighted in the third chapter are, informed by some of the empirical findings of this study, in line with this research's use of an iterative-parallel emergent research design and the focus of such a design on the interplay between data and theory.

Chapter four, the methodology chapter, explains and justifies the use of an iterative-parallel emergent research design as the overall approach of this study. Also in the fourth chapter the decisions to use case studies based upon both elite interviews and documentary evidence are justified. Additionally, chapter four explains the selection of the case studies and the process of gathering the data, as well as discussing some of the limitations and tradeoffs of this research.

Chapters five and six document the two case studies of policies intended to ameliorate US oil dependence – CAFE standards and the FreedomCAR partnership – with the investigations guided by the following interlinked research questions.

To what extent were corporate interests influential in US oil-dependence policy evolution under Bush?

1. Through what methods did the influence of corporate interests work?
 - a. What methods did corporations themselves use to represent their interests?
2. Were corporations influential and, if so, why?
3. What was the impact of the inclusion of corporate interests in the policy-evolution process?

These case study chapters are organised chronologically so that the evolution of policy can be demonstrated. Chapter seven – the discussion chapter – uses the case studies to answer the research questions directly, and is structured so that it answers each sequentially. In addition, chapter seven serves to highlight both the analytical limitations, and the academic contribution, of this research. Chapter eight concludes this thesis by tying chapters three, five, six and seven to the motivating

question and the wider issues of oil dependence discussed above; the influence of corporations is discussed in the context of long-standing, persistent and entrenched US oil dependence.

The main findings of this thesis are that the interests of the automobile corporations were heavily involved in the policy evolution of both CAFE and FreedomCAR. The influence of these corporations worked through many mechanisms – from marketplace decisions to supportive ideological environments – and it enabled them to fundamentally alter both government policy and the operation of society in their interest. In light of this finding, this thesis concludes that corporate power being used to protect a profitable (but wasteful) status quo goes some way to explaining why the US has never adopted a coherent energy policy and why the US is so dependent upon oil.

In summary, the structure of this thesis starts by explaining the issue of oil dependence as the background to the study. It moves on to explore interest group theory and, finding this literature deficient, then constructs an analytical framework for understanding corporate power from a broader array of literature. This framework is then applied to two case studies in order to understand how, why and to what extent corporations were powerful. The findings of these case studies, as well as being used to answer the research questions and explore the power of corporations, are finally used to inform a partial answer to the motivating question.

There are four original academic contributions of this thesis. First, it provides an analytical framework for understanding the power of a corporation working as a political actor. The utility of the framework is such that it could be applied and adapted in further studies of business influence and, to aid such a move, is presented in a generic, widely-applicable form in chapter seven. Second, in applying the framework, this thesis provides two original policy case studies of recent events, which are based upon original data gathered during fieldwork in Washington D.C. and Ann Arbor, Michigan. One of these case studies – the FreedomCAR Partnership – is particularly original due to the little attention it has garnered in the decade since its inception. Third, the thesis demonstrates the validity of a holistic focus upon policy evolution, rather than policy making, for understanding questions of power and influence. Following from its criticism of contemporary US interest group theory, this thesis makes the case that the focus of enquiry needs to return to broader analysis

of “who governs?” – or Held and McGrew’s (2003 p.8) “Who rules, in whose interests, by what mechanisms and for what purposes?” – than is currently carried out in US interest group literature. Fourth, this thesis shows how corporate power in domestic politics is connected to the international consequences of US oil dependence and the world problems that such dependence exacerbates; the thesis highlights interlinkages between domestic policy and international problems that have been largely ignored in explorations of oil dependence. Thus, the contributions of this thesis are to provide analytical and methodological insight into how to study corporate power, to use original empirical material to document particular instances of corporate power, and to link major real world problems to documented instances of corporate power.

Bibliography

- Bachrach, P. & Baratz, M. 1962. The Two Faces of Power. *The American Political Science Review*, 56, 947-952.
- Bang, G. 2010. Energy Security and Climate Change Concerns: Triggers for Energy Policy Change in the United States? *Energy Policy*, 38, 1645-1653.
- Boele, R., Fabig, H. & Wheeler, D. 2001. Shell, Nigeria and the Ogoni. A Study in Unsustainable Development. *Sustainable Development*, 9, 74-86.
- Böhm, S., Jones, C., Land, C. & Paterson, M. 2006. Part One Conceptualizing Automobility: Introduction: Impossibilities of Automobility. *The Sociological Review*, 54, 1-16.
- Bromley, S. 2005. The United States and the Control of World Oil. *Government and Opposition*, 40, 225-255.
- Bureau of Transportation Statistics. 2009. *Domestic Demand for Refined Petroleum Products by Sector* [Online]. Available: http://www.bts.gov/publications/national_transportation_statistics/html/table_04_03.html [Accessed 29/05/2010].
- Bureau of Transportation Statistics. 2012. *Overview of US Petroleum Production, Imports, Exports and Consumption* [Online]. Available: http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_01.html [Accessed 10/01/2013].
- Campbell, D. 2005. The Biopolitics of Security. *American Quarterly*, 57, 943-972.
- Carter, J. 1977. *The President's Proposed Energy Policy* [Online]. Available: http://www.pbs.org/wgbh/amex/carter/filmmore/ps_energy.html [Accessed 05/06/2010].
- Central Intelligence Agency. 2009. *CIA World Factbook: Oil Consumption* [Online]. Available: <https://www.cia.gov/library/publications/the-world-factbook/fields/2174.html?countryName=&countryCode=xx®ionCode=Z?countryCode=xx#xx> [Accessed 18/01/2010].

- Dahl, R. 1957. The Concept of Power. *Behavioral Science*, 2, 201-205.
- Drutman, L. J. 2010. *The Business of America is Lobbying: The Expansion of Corporate Political Activity and the Future of American Pluralism*. PhD, University of California, Berkeley.
- Dye, T. R., Schubert, L. & Zeigler, H. 2011. *The Irony of Democracy: An Uncommon Introduction to American Politics*, Boston, MA, Wadsworth Publishing Company.
- Elkind, J. 2010. Energy Security: Call for a Broader Agenda. In: Pascaul, C. & Elkind, J. (eds.) *Energy Security*. Washington D.C.: Brookings Institute Press.
- Energy Information Administration. 2010a. *International Petroleum Consumption 1970-2007* [Online]. Available: <http://www.eia.doe.gov/emeu/ipsr/t46.xls> [Accessed 29/05/2010].
- Energy Information Administration. 2010b. *Weekly US Spot Price* [Online]. Available: <http://www.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WTOTUSA&f=W> [Accessed 08/11/2010].
- Engdahl, W. 2004. *A Century of War: Anglo-American Oil Politics and the New World Order*, London, Pluto Press.
- Fantazzini, D., Höök, M. & Angelantoni, A. 2011. Global Oil Risks in the Early 21st Century. *Energy Policy*, 39, 7865-7873.
- Gaventa, J. 2006. Finding the Spaces for Change: A Power Analysis. *IDS bulletin*, 37, 23-33.
- Goel, R. 2004. A Bargain Born of a Paradox: The Oil Industry's Role in American Domestic and Foreign Policy. *New Political Economy*, 9, 467-492.
- Greene, D. 2005. Costs of US Oil Dependence: 2005 Update. Oak Ridge: Department of Energy.
- Greene, D. & Tishchishyna, N. 2000. Costs of Oil Dependence: 2000 Update. Oak Ridge: Department of Energy.
- Greene, D. L. & Plotkin, S. 2011. Reducing Greenhouse Gas Emissions from US Transportation. Arlington, VA: Pew Center on Global Climate Change.
- Hakes, J. 2008. *A Declaration of Energy Independence: How Freedom from Foreign Oil Can Improve National Security, Our Economy, and the Environment*, New Jersey, John Wiley & Sons.
- Hamilton, J. 2003. What is an Oil Shock? *Journal of Econometrics*, 113, 363-398.
- Hart, D. 2004. "Business" Is Not an Interest Group: On the Study of Companies in American National Politics. *Annual Review of Political Science*, 7, 47-69.
- Held, D. & McGrew, A. 2003. *The Global Transformations Reader*, Cambridge, Polity Press.
- International Energy Agency 2009. *Oil Information 2009*, Paris, International Energy Agency.
- Jernelöv, A. 2010. The Threats from Oil Spills: Now, Then, and in the Future. *AMBIO: A Journal of the Human Environment*, 39, 353-366.

- Keohane, R. 1984. *After Hegemony: Cooperation and Discord in the World Political Economy*, New Jersey, Princeton University Press.
- Kimerling, J. 1990. Disregarding Environmental Law: Petroleum Development in Protected Natural Areas and Indigenous Homelands in the Ecuadorian Amazon. *Hastings International and Comparative Law Review*, 14, 849-904.
- Klare, M. 2005. *Blood and Oil*, St Ives, Penguin.
- Lugar, R. G. & Woolsey, R. J. 1999. The New Petroleum. *Foreign Affairs*, 78, 88-102.
- Lukes, S. 1974. *Power: A Radical View*, Basingstoke, Macmillan.
- Miller, D. & Mooney, G. 2010. Introduction to the themed issue. Corporate Power: Agency, Communication, Influence and Social Policy. *Critical Social Policy*, 30, 459-471.
- Mosley, L. & Singer, D. A. 2009. The Global Financial Crisis: Lessons and Opportunities for International Political Economy. In: Phillips, N. & Weaver, C. (eds.) *International Political Economy: Debating the Past, Present and Future*. New York: Routledge.
- Nikiforuk, A. 2010. *Tar Sands: Dirty Oil and the Future of a Continent*, Seattle, Greystone Books.
- Owens, E. 2002. Response Strategies for Spills on Land. *Spill Science & Technology*, 7, 115-117.
- Proctor, R. N. 2012. *Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition*, Berkeley, University of California Press.
- Samet, J. M. 2007. Traffic, Air Pollution, and Health. *Inhalation Toxicology*, 19, 1021-1027.
- Seiler, C. 2008. *Republic of Drivers: A Cultural History of Automobility in America*, Chicago, University of Chicago Press.
- Soederberg, S., Menz, G. & Cerny, P. G. 2005. *Internalizing Globalization: The Rise of Neoliberalism and the Decline of National Varieties of Capitalism*, Basingstoke, Palgrave Macmillan.
- Tamminen, T. 2006. *Lives Per Gallon: The True Cost of Our Oil Addiction*, London, Island Press.
- Terazono, E. 2012. Brent spread over WTI widens to year-high. *Financial Times*, 08/10/2012.
- The Economist. 2010. *America's Trade Deficit: Oil and the Current Account* [Online]. Available: http://www.economist.com/blogs/freeexchange/2010/02/americas_trade_deficit [Accessed 09/10/2010].
- US Census Bureau. 2012. *US Imports of Crude Oil* [Online]. Available: <http://www.census.gov/foreign-trade/statistics/historical/petr.pdf> [Accessed 15/12/2012].
- VeneKlasen, L., Miller, V. & Budlender, D. 2007. *A New Weave of Power, People, and Politics: The Action Guide for Advocacy and Citizen Participation*, Rugby, Practical Action Publishing.

- Wards Automotive. 2012. *U.S. Vehicle Sales, 1931-2011* [Online]. Available: <http://wardsauto.com/keydata/historical/UsaSa01summary> [Accessed 10/01/2013].
- Wilks, S. 2013. *The Political Power of the Business Corporation*, Cheltenham, Edward Elgar Publishing.
- Wilson, G. 2006. Thirty Years of Business and Politics. In: Coen, D. & Grant, W. (eds.) *Business and Government: Methods and Practice*. Michigan: Barbara Budrich.
- Yergin, D. 1991. *The Prize: the Epic Quest for Oil, Money & Power*, London, Free Press.
- Yergin, D. 2006. Ensuring Energy Security. *Foreign Affairs*, 85, 69-82.

Chapter 2 – Interest Groups, Corporations and American Government

“If the business of Washington is business, the business of American politics scholarship is anything but. Individual companies are represented in American politics in large numbers. They are doing something, and we ought to learn what and why.”

David Hart (2004 p.47)

Questions of how interest groups work, how democratic government and interest groups interact, and the influence or impact of interest groups, have been asked for decades within mainstream US political science, and by many important figures in the discipline (i.e. David Truman (1951), E. E. Schattschneider (1960), Robert Dahl (1961) and Theodore Lowi (1969)). From asking these questions, a rich, mainstream and historically-significant body of literature has developed that attempts to understand the role and impact of interest groups on American democracy. Within this literature, business generally, and corporations specifically, are seen as a form of interest group that is in constant competition with other groups and subject to some degree of countervailing power within the political arena (Vogel, 1996). In this respect, the interest group literature provides various accounts of many of the mechanisms of influence which corporations utilise.

However, in treating corporations as an interest group, this literature misunderstands the nature of the corporation, does not recognise the differences between an interest group and a corporation, and does not account for many mechanisms of influence open to corporations (Hart, 2004). This problem is compounded by the fact that, while initial studies on interest groups were centrally concerned with the question of “Who governs?” and were involved in conceptual debates about the operation of power and influence in society, recent scholarship has operated with a restricted scope as to the mechanisms of influence and ignored conceptual debates surrounding power (Baumgartner and Leech, 1998 pp.58-62). Ignoring the complexity of the concept of power has been particularly debilitating for this literature as influence and power rarely work in a direct, mono-causal fashion.

Instead of exploring power within society, the interest group literature has increasingly focused upon the minutiae of single parts of the policy process using

primarily quantitative methods, (Hojnacki et al., 2012) which has produced a “gaggle of models” (Lowery and Gray, 2004 p.168) that offer different explanations of political phenomena. Consequently, there is no central explanatory framework covering how interest groups are influential or how they could influence policy. As such, lacking both a specific focus on corporations and any broad framework for understanding influence, the contemporary interest group literature’s approach and assumptions are limited in their usefulness for understanding the broader operation of power generally, and corporate power specifically.

The purpose of this chapter, then, is two-fold. First, this chapter provides an overview of the interest group literature and how these groups interact with government so as to draw out and discuss some of the mechanisms of influence used by organised interests that have been identified in this literature. This overview also provides important background information about the US government that is drawn upon in the case study chapters. Second, this chapter (in conjunction with the following chapter) demonstrates and explains why the mechanisms of influence identified by the literature only tell part of the story of corporate power and, because of this partial story, would lead to a crucial mischaracterisation of the American system.

As such, this chapter first discusses the basic operation of American government and the policy-making environments that corporations and other organised interests operate within. The subsequent section defines organised interests broadly and explains the methods by which they operate to influence the American government. The chapter then moves onto a theoretical discussion of the relationship between interest groups and the US federal government, drawing on both pluralism and multiple elitism in order to fully contextualise the most recent dominant paradigm in interest group theory – neopluralism – so as to allow an explanation of why it has not, and possibly cannot, provide a full understanding of corporate power.

American Government

Formal power within the American system is held by many actors and operates on many different levels; a situation that is protected by an entrenched and codified constitution. At the federal level, the Constitution separates powers between the executive, the legislature and the judiciary, which are headed by the President,

Congress and the Supreme Court respectively. The President – elected on a four-year term for a maximum of two terms – is the only office directly elected by a nationwide constituency⁷, and is the head of state, the Commander-in-Chief of the armed forces and the main figurehead for the entire political system. However, while the national figurehead, the President does not have formal legislative powers. Instead, the direct policymaking abilities of the President lie in government departments and executive agencies (such as the Department of Transport, and the National Highway Traffic and Safety Administration), the President's capacity to reassign appropriated funding, and the President's authority over the US bureaucracy. Furthermore, the President is also capable of issuing executive orders, which are intended to be clarifications of existing laws, but have, on a number of occasions⁸, been much more law-like.

Instead, the constitution places the power to craft law with Congress. Congress, however, is bicameral, consisting of the House of Representatives and the Senate, with the Senate being the upper house. Power inside Congress, then, is dispersed and subject to negotiation and compromise between the two houses (Koger, 2010). Negotiation can be difficult as Representatives and Senators tend to have different constituency interests owing to their different constituencies; the 435 Representatives in the House are elected from broadly population-proportionate districts whereas Senators are elected by a state-wide constituency, with 2 Senators coming from each of the 50 states. So, for instance, the representation of the interests of a low-population state would be proportionally greater in the Senate, than in the House. For example, Wyoming has one Representative (0.22% of the House total), but two Senators (2% of the Senate total).

Negotiation and compromise are also impeded by the different terms that Senators and Representatives serve. Representatives are elected on a two year basis, whereas Senators are elected on a six-year basis, with one third of the Senate up for election every two years. Representatives, then, are incentivised by their desire for re-election to pay closer attention to shifts in public opinion and to take a shorter-term view with regards to political payoffs (Erikson and Wright, 2008). Moreover,

⁷ The Vice-President is indirectly elected by a nation-wide constituency.

⁸ Some notable examples include Executive Order 9066, 10925 and 12291, which respectively allowed the internment of Japanese-Americans during WW2, affirmative action with government contractors, and the use of cost-benefit analysis in major government regulations (Mayer, 1999).

there are pockets of power within both houses in the form of committees, which can further complicate relations within and between the houses (Sinclair, 1986 p.37). Committees and sub-committees that have a specific policy remit (Science, Energy, Armed Services, etc), within which they examine and amend legislation, can hold hearings on contemporary issues and, if legislation is favoured by the committee, pass the legislation on for further debate. Equally, if not favoured by the committee, a legislative idea can be seriously impeded. As such, significant amounts of power to frame issues and to set the agenda in particular issue areas have traditionally been vested in the members of a corresponding committee (Shepsle and Weingast, 1987).

These differences, as well as differences in House and Senate rules, have traditionally resulted in bodies – and individuals as part of the bodies – who functioned and acted in different ways. As the decision-making processes of the Senate emphasised bipartisan consensus and House decisions were frequently a reflection of the will of the dominant party (Baker, 1995 p.67), Senators were seen as more open to compromise and negotiation rather than ideological posturing. As one former Senator noted “in the Senate reason prevails more, logic prevails more, and personal and close friendships are more important than they are in the House” (as quoted in Baker, 1995 p.84). However, recent research (Poole and Rosenthal, 2011 p.7, Gailmard and Jenkins, 2007 p.698) has suggested that the Senate has become more ideologically divided and begun to reflect more of the will of the dominant party, particularly since 2000.

While policy making within Congress is subject to negotiation and compromise, policies have to go through further negotiation and compromise between the President and Congress (Mann and Ornstein, 2008). The President can veto, or threaten to veto, legislation, which can, in turn, be overridden by a two-thirds majority in both houses. Congress also has the power of the purse, whereby using the appropriations process Congress withholds, or places stipulations, on the use of funds. When the executive and legislature are unable to negotiate a joint political programme of compromise, and instead resort to blocking each other using their respective powers, the system reaches a point of gridlock, which most commonly occurs when the executive and legislature are controlled by different political parties.

The co-operation and working of the executive and legislature, then, is dynamic, context sensitive and historically contingent. However, the actions of the executive

and legislature are limited by the Constitution, which is protected by the Supreme Court. The Supreme Court, and the subordinate courts, work to ensure legislation passed by either the executive or legislature is in line with the constitution; the judiciary is intended to work as a corrective that ensures the separation of powers is maintained. The judiciary worked in this respect in *INS vs Chadha*, which deemed the one-house veto, which Congress had been incorporating into legislation since the Watergate scandal, unconstitutional as it violated the concept of bicameralism (Fisher, 2005).

On the other hand, while the Supreme Court is intended to restore the constitutional balance, it has also, at times, re-interpreted the constitution, sought to apply constitutional precepts to modern-day problems and generally updated laws in line with the personal views of the justices. This judicial activism can be seen in *Brown v. Board of Education*, which desegregated schools, and *Roe v. Wade*, which allowed abortion. As such, the judiciary, in both its activist and restraining roles, offers another political arena that can impact upon policy making (Barnum, 1985).

The process of policy making, then, is highly interactive, with numerous bodies capable of contributing (or blocking, as the case may be) during policy evolution. This interactivity is further increased by the openness of the system – supported by the societal belief in democracy – and the desire to open government up to public scrutiny, as seen in the Freedom of Information Act 1966, and the many re-iterations of the act that have followed. Moreover, while there are many prominent figures in the US system, not least the President, who are assumed to be powerful, the capacity of these figures to achieve their political goals is limited, contingent and subject to change with variations in the political landscape. The most important point for organised interests from this discussion is that there are multiple avenues of power and many opportunities for gaining access to the system. In turn, there are also many tactics that can be utilised by interest groups to gain access to different parts of the system.

Interest Groups

The seminal definition of an interest group is “any group that, on the basis of one or more shared attitudes, makes certain claims upon other groups in the society for the establishment, maintenance, or enhancement of forms of behaviour that are implied

by the shared attitudes” (Truman, 1951 p.33). For instance, a group supportive of greater government provision of mental health services would constitute an interest group under this definition as it is making a claim upon all groups in society (taxpayers) to support a form of behaviour (provision for those with mental health issues) based on a shared belief (that society should provide care for those afflicted with mental health problems). However, this definition does not explicate the very political nature of organised interests – that these groups, formed on the basis of shared attitudes, seek to influence government policy (Berry and Wilcox, 2007 p.5).

Furthermore, Truman’s definition appears to refer primarily to “ideal-typical voluntary association of citizens” interest groups and not other groups that are often included in the term (Hart, 2004 p.48). Interest groups, as used in the literature, does refer to ideal-typical voluntary associations of citizens, but also refers to intergovernmental groups (such as states), trade associations, corporations and unions (Wright, 1996 pp.22-30). This grouping of divergent actors is a problem as there are differing levels of legal restrictions placed upon the activities of various groups. Moreover, the capacities and resources with which these groups attempt to influence policy are not the same across all types of group. In fact, this problem of focusing on citizen groups and then considering other organisations within the same framework is prevalent in much of the theory that attempts to understand the roles of these groups in US democracy (Lindblom, 1977 p.356). In light of this situation, the phrase “organised interests” is preferred as it focuses less on the “group” element, with the term “interest group” used to refer to the body of literature that implicitly focuses on ideal-typical voluntary groups (Cigler, 1991 pp.102-103).

Organised interests, then, can be thought of as political organisations that exist outside of government, but that seek to influence government through non-violent means and do not seek political office (Wright, 1996 p.22). Further to being outside of government, these organisations represent, as Schattschneider (1960 p.23) states, “interests shared by only a few people or a fraction of the community; they *exclude* others and may be *adverse* to them.” An organised interest, unlike a political party, only represents (and tries to appeal to) a relatively small constituency based on narrow political preferences. Hence, while there are only two major political parties in the US, there were 13,776 organised interests registered as operating on the federal level in 2006 (Schlozman, 2010 p.443). As such, the array of preferences

represented by organised interests is exceedingly diverse in the US political system; from environmentalists like the Sierra Club, through the anti-abortion National Right to Life Committee to the pro-gun-rights National Rifle Association. Similarly, the actions that organised interests take are diverse and there are many different mechanisms of influence through which these organised interests try to alter, and become intimately involved in, policy making

In the interest group literature, two main categories of influence mechanisms have been identified – lobbying and financial contributions – through which organised interests seek to change policy. Turning first to lobbying, it can be further divided into outside and inside methods, although outside/inside is more of a continuum than a straightforward dividing line (Brown and Waltzer, 2004 p.545). Both types of lobbying can be used powerfully, although outside lobbying is usually considered to be the less effective but more widely available type (Baumgartner and Leech, 1998 pp.164-165). Kollman (1998 p.3) defines outside lobbying as “attempts by interest group leaders to mobilize citizens outside the policymaking community to contact or pressure public officials inside the policymaking community.” Thus, outside lobbying refers to indirect pressure on policymakers brought to bear through a number of different tactics that mobilise public opinion. Outside lobbying tactics can be divided by the level of the indirectness of communication to policymakers, although such a division should not be understood as necessarily reflective of the effectiveness of the tactics (Birnbaum, 1985 p.138). The least indirect are grassroots tactics, such as protesting and letter-writing campaigns, as they seek to communicate citizen mobilisation on an organised interest issue directly to policymakers. Letter-writing campaigns (which, in their more modern form, also include e-mailing and faxing), in particular, have been seen as an effective tool of persuading legislators of the strength of mass opinion and of showing where the interests of a legislator’s constituents lie (Kollman, 1998 p.5, Goldstein, 1999 pp.15-17).

Grassroots tactics are followed in their levels of directness by efforts to communicate the position of the interest groups to fellow citizens through advocacy advertising campaigns. Advocacy campaigns traditionally involved radio advertising, poster campaigns and television advertising, but are also beginning to utilise new forms of communication represented by e-mail and the rise of social networking (Magleby, 2010 pp.309-310). The point of advocacy campaigns is to persuade citizens that the

political viewpoint of the organised interest is correct and thus motivate citizens to utilise their political power (voting, campaigning, sending letters) in support of the organised interests' preferences. A specific form of advocacy campaigning involves candidate-focused advocacy; where an interest group expresses its support (or not, as the case may be) through advertising for a particular candidate. This expression of support is done with the hope that it will alter the voting intentions of citizens who share similar views to that of the interest group and, so, candidate-advocacy campaigns are utilised in order to help or hinder the candidate's chances of election (Walker, 1991 p.109, Kollman, 1998 p. 35).

Finally, the most indirect method of outside lobbying is the communication of organised interest preferences to the media – through direct contact with media staff, the holding of press conferences and the presentation of research to the media – as it involves using the press as an intermediary to communicate to the citizenry (Nownes and Freeman, 1998 p.91). While, unlike advocacy campaigns, the media may not report the message of the organised interest accurately, successful media repetition can raise the profile of a particular issue so that policymakers have to confront the increasingly-salient issue (Browne, 1995 p.11). Also, the use of the mass media in such a manner can offer a powerful way of putting forward a different “frame” of a policy problem that may have lasting effects on how a problem is perceived and, thus, what solutions are viewed as apt and tenable (Richardson, 2000 p.1008).

In contrast, inside lobbying, which has attracted far more academic attention and is where the term “lobbying” came from in the first place – when interested groups would congregate in the lobbies of the legislature in order to talk to legislators when they were leaving or entering (Berry and Wilcox, 2007 p.6) – is the direct communication between organised interests and relevant policymakers in order to effect change in policy (Nownes and Freeman, 1998 pp.101-102). Inside lobbying can occur at all three constituent parts of the federal government; the executive, the legislature and the judiciary.

The most commonly-cited examples of insider lobbying by organised interests concern lobbying at legislative level. Legislative lobbying can involve giving testimony at Congressional hearings, meeting legislators or helping to draft legislation. Similarly, lobbying at the executive level involves contacting executive

agency personnel, testifying at executive agency hearings and presenting research to executive agencies (Kollman, 1998 p.35). While executive agency lobbying has attracted less academic and press scrutiny because it operates behind closed doors (Lord, 2000 p.78), both legislative and executive lobbying are considered “classic” forms of lobbying that are pursued by well-resourced and well-connected groups (Nownes and Freeman, 1998 p.87).

The type of insider lobbying that has generated the least level of scholarly scrutiny is lobbying at the judicial level (Epstein and Rowland, 1995 p.275). Lobbying at the judicial level involves organised interests challenging enacted policy in the courts or seeking to have the courts recognise that certain actions are in violation of already established laws (ibid. p.278). The most noteworthy examples of organised interests that have often sought to influence policy through litigation are the American Civil Liberties Union (ACLU) and the National Association for the Advancement of Coloured People (NAACP), who both started litigation when they suspected that US law violated constitutionally-protected civil liberties (Zackin, 2008). Lobbying through the judiciary can be a particularly effective means of influencing policy in the US because of the insulation of the judiciary from the other parts of the government through the separation of powers. Unlike in many other countries, the separation of powers in the US allows the judiciary to dissent (in line with the constitution) from the views of the government and the practices the government allows/does not prohibit (Shughart, 1997 pp.958-959).

The use of these inside lobbying tactics is partially determined by the level of “access” that an organised interest has. As Nownes and Freeman point out (1998 p.98) “it is a truism, for example, that groups without money, “connections,” or access must resort to outside strategies such as protesting or “using” the media.” So, those with little access will, should they wish to attempt to influence policy, have to resort to outside lobbying. However, those with access are able to (and do) utilise both inside and outside methods of lobbying (Kollman, 1998 pp.51-54). Yet access is difficult to conceptualise and measure as it commonly operates behind the scenes; as Wright (1996 p.76) notes “the concept of access is one of the most ubiquitous, and also one of the most ambiguous, in all of the lobbying literature.” The ambiguity in the concept of access is caused by the concepts of influence and access not

being “fully separable” (Schlozman and Tierney, 1986 p.165). For instance, Truman (1951 p.264) views access as central to influence, noting that;

“power of any kind cannot be reached by a political interest group, or its leaders, without access to one or more key points of decision in the government. Access, therefore, becomes the facilitating intermediate objective of political interest groups. The development and improvement of such access is a common denominator of the tactics of all of them.”

Access, then, can be thought of as the ability of an actor to represent their views in closed or invited political spaces (Cornwall, 2002) where there are fewer competitors and closer relationships with political actors are possible. Through admission to important decision-making places (or contact with important decision makers) an actor would have greater opportunities for communicating their interests, or information that works in their interest, than other actors working primarily in open political spaces where participation is unrestricted (but not where decisions are ultimately made). Markers that could indicate access are, for example, the degree to which an organised interest can directly contact policymakers, how much the organised interest’s information is viewed as trustworthy, and invitations to speak at Congressional hearings (Nownes and Freeman, 1998 p.98).

Organised interests can gain access by possessing a similar ideological outlook as a policymaker, through networking and through the provision of sound information (i.e. the cultivation of information trustworthiness) (Wright, 1996 p.78). Access can also be the product of interpersonal relations between the staffs of the government and organised interests, or their lobbyists. One possible way in which organised interests attempt to secure, or improve, access and another avenue of potential organised-interest influence beyond lobbying, is through contributions to the electoral campaign of an individual politician or a party. The purpose of contributions, as Austen-Smith (1987 p.123) notes, is “either to affect the election outcome or to obtain influence over legislative decision-making by the successful candidate (or both).” So contributions from organised interests are either motivated by wanting to support a candidate representative of the organised interests’ preferences, or by an attempt to purchase access and make the candidate more supportive of the organised interests’ position. Because of the similarities between attempts to purchase access and outright corruption (Corrado et al., 1997 p.36), there are a number of legal

restrictions that, as they changed during the timeframe of this study, complicate the discussion of campaign finance.

These restrictions have emerged through repeated legislative attempts over the past century to limit or control the contributions that organised interests can make, with the Tillman Act of 1907 – which unsuccessfully attempted to bar corporations and national banks from campaign contributions – being the first piece of campaign finance reform legislation (ibid p.36). However, the most important piece of legislation was the 1972 Federal Election Campaign Act (FECA) as it established rules that, despite some alterations by the Supreme Court and an amendment to the legislation in 1974 that established the Federal Election Commission (FEC), were not subject to major reform until 2002 and are still relevant to the post-2002 system (Berry and Wilcox, 2007 pp.79-80).⁹

FECA originally established a comprehensive system of campaign finance that limited contributions from individuals and groups, provided greater public financing of candidates and increased contribution transparency (Ansolabehere et al., 2003 p.106). One of the enduring limitations that FECA established is the rule that contributions can either go through individuals or through Political Action Committees (PACs). Originally, individual contributions were limited to \$1,000 per candidate per election, an annual total limit of \$25,000 on all contributions and, as a sublimit of the latter restriction, \$5,000 to any single PAC (Sorauf, 1992 p.9). In 2008, towards the end of the timeframe of this study, these limits were set at \$2,300, \$54,100¹⁰ and \$5,000 respectively (Federal Election Commission, 2010).

By allowing contributions to go through PACs, FECA rules established PACs as a major force in electoral fundraising (Wright, 1996 p.121). So, while PACs were originally set up in the 1940s (in order for unions and corporations to bypass a law that did not allow them to contribute directly to election campaigns), FECA was responsible for establishing them as a feature of American politics. However, while legalising them, FECA brought scrutiny to the contributions of PACs as it required

⁹ The 2002 reforms (the Bipartisan Campaign Reform Act) had some of its major provisions overturned by the Supreme Court in 2010 and so the current system of campaign finance is very different from that described here. However, these recent changes fall outside the timeframe of this study and so have not been discussed (but see Kang, 2010 for details).

¹⁰ Since FECA's inception annual limits were replaced with biennial limits, meaning that an individual can use their entire two-year allocation of \$108,200 within one year. For the sake of direct comparison between 1974 and 2008 half of the total biennial limit, \$54,100, is used above.

PACs to report all financial activities to the FEC and, in a requirement that is still in place, limited the contribution a PAC could make to \$5,000 per candidate per election (Berry and Wilcox, 2007 p.78). Corporate PACs are also restricted to raising money only from stockholders and individuals at managerial level, and union PACs, likewise, are limited to only raising money from members. The result of these restrictions is that broad-based groups with many members (particularly unions) can raise the most money and can most effectively utilise PACs, whereas corporations are more restricted.

However, the campaign finance system established by FECA has been altered by Supreme Court rulings (particularly *Buckley vs Valeo*¹¹) and practices adopted by political actors (Conway et al., 2002 p.135). The use of “soft” money – money donated to a political party, instead of a candidate, which could be used for general party-building activities (such as get-the-vote-out campaigns or advertising campaigns) but not for the election of a particular candidate – was adopted and quickly came to be a significant source of funds for political parties; with soft money accounting for \$224 million of a total \$669 million that the Democrats raised in 1998 (Ansolabehere and Snyder Jr, 2000 p.605). Soft money allowed groups and individuals to bypass FECA restrictions, with the money subject to FECA restrictions being “hard” money (Sorauf, 1992 p.260). Alongside soft money, PACs also adopted the tactic of “bundling” their contributions to individual candidates with the contributions of many of the individual members of a PAC; who, utilising their personal allowance, can give their \$2,300 candidate contribution alongside the contribution of the PAC. The result of bundling is that some PACs can actually give far in excess of the limit and be recognised as the contributor of the funds but also avoid official sanction (Berry and Wilcox, 2007 p.78).

FECA’s major provisions, and the loopholes that were being exploited, were altered by the 2002 Bipartisan Campaign Reform Act (BCRA). Motivated by concerns about the rise in the use of soft money funds and the increasing use of candidate advocacy campaigns by organised interests, the BCRA sought to consolidate the channels through which money could be donated and restrict the groups allowed to air

¹¹ *Buckley vs Valeo* struck down two key parts of FECA 1974. It held that spending money to influence elections was protected under free speech amendments and so removed provisions limiting total campaign expenditures, “independent” expenditures and contributions by candidates to their own campaigns.

candidate-advocacy campaigns (ibid. p.113). The most important aspect of the BCRA is that it banned “soft” money donations and banned union and corporate candidate-advocacy campaigns within sixty days of a general election and thirty days of a primary (Boatright et al., 2006 p.113).

However, like FECA before it, the intentions of BCRA have been thwarted by the Supreme Court declaring parts unconstitutional and through the exploitation of loopholes in the campaign finance system. The ban on soft money has resulted in finances being directed to 527¹² groups to run non-coordinated advocacy campaigns (ibid. p.124). The advantage for organised interests of 527 groups, such as Swift Boat Veterans for Truth and MoveOn.org, is that they are not subject to FEC oversight or restrictions on their spending or on the financial contributions made to them. The restriction on advocacy campaigns was further weakened in 2007 in the *FEC vs Wisconsin Right to Life* where the Supreme Court ruled that third party issue ads, which did not promote a candidate or party, could be run with union or corporate funds within sixty days of a general election and thirty days of a primary (Ortiz, 2008 p.147). As such, while there has been a change in the organisational structure of campaign finance, the content remains much the same since FECA.

Campaign contributions, inside lobbying and outside lobbying all represent typical, non-exclusive methods by which organised interests seek to influence policy. However, while it is relatively simple to determine what these groups do, there is a big debate as to what the consequences of their actions are. As such, the next section will investigate the ways in which the relationship between the state and interest groups has been theorised; the ways in which organised interest actions have been understood to alter government policy. In doing so, it will discuss the three major paradigms in interest group theory – pluralism, economic multiple elitism and neopluralism.¹³

¹² So named because of the sections of the tax code that give them tax-exempt status.

¹³ These labels come from McFarland (2007, 2010). However, “economic” has been added to the second body of work to help distinguish it from the positions of theorists such as Schattschneider who McFarland (2010, p.42) includes with later authors such as Olson and Lowi, in spite of the significant differences in their approach and tenor. This nomenclature is in line with Lowery and Gray (2004, p.165) who label this second body of work the “economic perspective” because of its focus on traditional issues of economic inquiry – transaction and exchange.

Interest Group Theory

Interest groups have been a subject of theoretical study, and a cause for concern about the capacity for the US system to institute change, since the inception of the country. James Madison, the principal author of the US constitution and the fourth President of the United States, wrote about how to guard against “factions” in the ninth and tenth *Federalist Papers*; which preceded the writing of the constitution of the United States. By factions, Madison was referring to groups of citizens united by common opinions, interests and passions (Epstein, 1984 p.59). Factions naturally arise as forming differences of opinion is “sown into the nature of man” and, in a society with liberty, factional differences can be expressed (Madison, 2010). The danger of these groups becoming powerful, or, as Madison puts it,

“the mischief of faction”, is that it results in a situation in that “governments are too unstable, that the public good is disregarded in the conflicts of rival parties, and that measures are too often decided, not according to the rules of justice and the rights of the minor party, but by the superior force of an interested and overbearing majority” (ibid.).

Madison identifies two ways of dealing with mischief of factions – to remove its causes or to ameliorate its effects. He rejects two possible means by which the causes of faction can be removed – by ensuring that all citizens hold the same views or through the destruction of liberty – on the grounds they are either impossible or a cure that is worse than the illness. He instead argues that a republic is the best form of government to deal with the mischief of faction in that elected representatives will have “enlightened views and virtuous sentiments” that put them above factional interests and in that there would be checks and balances which create obstacles to the “accomplishment of the secret wishes of an unjust and interested majority” (ibid.). Madison also thought that the “mischief of faction” could be cured in a country as large as the United States, because, with the sheer number of factions that could be formed and the natural competition between these factions, no one faction could come to dominate a federal government with checks and balances (Berry and Wilcox, 2007 p.3). So, while Madison was concerned about the possibility of faction overriding democracy, he saw that factional interests were necessary in a free society and that the soon-to-be American system could cope with the potential

mischief of factions. It was thus Madison's view that effective representative government and factions were compatible (ibid. p.4).

The largely positive view of factions expounded by Madison influenced later, post-war interest group scholars and state theorists, particularly pluralists such as David Truman (1951), Robert Dahl (1961) and Nelson Polsby (1963). Dahl and Polsby's work, which attempted to understand the distribution of political power by looking at the politics of New Haven,¹⁴ was particularly influential; with Dahl's account, in particular, coming to be seen as the seminal pluralist work. Motivated by questions of whether the unequal distribution of wealth had led to an unequal distribution of political power (Dahl, 1961 p.1), Dahl saw New Haven as having become a polyarchy during the two centuries previous to the study. Where there was previously a patrician class of the wealthy, Dahl argued, the power of this group had been eroded over time and by the 1950s a number of contending groups vied for power (ibid. p.11).

For Dahl, this view of interest competition was further strengthened by there being many different types of power resources available and, while these contending groups will have an inequality of power resources between them, no group will have overriding power, no power resource would always be effective and virtually no individual would be entirely without power resources (ibid. p.228). Furthermore, should the preferences of one group be threatened by the preferences of another, then the threatened group will utilise its resources and thus work as a countervailing power (Truman, 1951 p.87). As such, no one group was able to dominate the decision-making process and, instead of group domination, politics was a case of compromise. This viewpoint, as is made clearer in Polsby's work (Jordan, 1990 p.289), was an argument made in direct opposition to the view of authors such as C. Wright Mills (1956), who saw America as ruled by a single elite.

While the views of the pluralists were nuanced, and their conclusions guarded, the strength of their argument, and the purpose of it, have often been overstated. For example, the arguments of the above authors are summarised by Carole Greenwald (1977 p.17) as

¹⁴ The New Haven dataset was originally designed for the making of a trilogy of books. The third book of the trilogy, Raymond Wolfinger's *The Politics of Progress* (1973) completed the set.

“pluralist theory assumes that within the public arena there will be countervailing centres of power within the governmental institutions and among outsiders. Competition is implicit in the notion that groups, as surrogates for individuals, will produce products representing the diversity of opinions that might have been possible in the individual decision days of democratic Athens.”

However, the pluralist view of democracy wasn't as rose tinted as Greenwald suggests. Dahl viewed New Haven not as an example of a modern democratic Athens but of a “democratic system, warts and all” (op. cit. p.311); hence the use of the term pluralist to describe the system, instead of democratic. This point is easier to understand in the context of what pluralism was reacting against; pluralism rejected an emerging class-based view that power rested with a single power elite and that, because it meant the non-representation of the majority of people, US democracy was nothing more than a sham (Jordan, 1990 pp.287-289). Hence, pluralism was defending America's democratic credentials, but did recognise that the system suffered a number of problems. Nevertheless, the pluralist view, of the US state being largely democratic because of the countervailing power of opposing interest groups, was the dominant research paradigm of interest group theory until the late 1960s and remains an influential view of how the system works with the US public (McFarland, 1987 p.130).

However, the pluralist account came under attack for its assumptions about the likelihood of group mobilisation when preferences are threatened; most notably from the economist Mancur Olson (1971). In *The Logic of Collective Action* Olson posited that the pursuit of collective, or group, benefits is not a rational action. Accordingly, group participation based on the pursuit of collective benefits is beset by the free rider problem – “when an interest group produces public goods (collective benefits), members lose the incentive to contribute to the maintenance of the interest group, because they will receive the benefit anyway... Because of this free-rider problem, an interest group will lose influence and may cease to exist” (McFarland, 1987 p.131). Hence, according to Olson, effective interest groups are unlikely to form around collective goals such as improving air quality, universal healthcare or reducing oil dependence. From this groundwork, Olson contradicts Madison's view that in a society as large as the US the domination of faction is less likely and that the

common good will prevail. In fact, Olson (1971 p.48) argues that in larger societies there are larger organisational costs for collective-goal interest groups and that, consequently, citizen groups based around collective goals are less likely to form in larger societies.

The consequence of Olson's argument for the pluralist perspective is that there is an inequality of motivation to organise between many potential groups (ibid. p.51). There will therefore be an inequality of representation of different interests and preferences. Thus, instead of the pluralist view of a number of contending interests over national policy, there is domination of policy areas by a few narrow interests – instead of Dahl's pluralistic push and pull of interests and power diffused among interests, it is "rule by multiple elites, each in its own policy area" (McFarland, 2010 p.41). Following this argument, and the assumptions taken from economics that inform his account, Olson's view on interest groups has been termed economic multiple elite theory.

Economic multiple elite theory was hugely influential within the interest group literature and its insights came to form the dominant paradigm in the literature for the late 1960s and early 1970s, thereby replacing pluralism (McFarland, 2007 p.45). At the same time as Olson, but working from a political science perspective, Theodore Lowi put forward a historical and normative multiple elite theory that attempted to account for the societal and political impact of interest groups. In Lowi's (1967 p.13) view, "Congressmen are guided in their votes, Presidents in their programs, and administrators in their discretion, by whatever organized interests they have taken for themselves as the most legitimate". Building his historical account of how this situation had come to pass, Lowi (1969) argues that American society's 19th Century version of liberalism had, during the 1930s and the beginnings of FDR's New Deal, been replaced with "interest group liberalism". Interest group liberalism is marked by a move away from the concept of a limited state and by the rapid expansion in the responsibilities (and size) of the state. In turn, this expansion necessitated the delegation of authority from the democratically-elected institutions (on state and federal level) to the bureaucracy (Lowi, 1969 p.18).

Interest group liberalism was also marked by a public belief in pluralism and the belief, inherent in the pluralist view, that there will be a natural balance of interests groups (ibid. pp.71-72). The result of the combination of this belief and the

delegation of authority was that policy was being made in a democratic vacuum that positively invited interest groups to be involved (ibid. p.86). Furthermore, because Lowi thought that only private (rather than public) goals would motivate groups, only a relatively small section of interests would end up being represented in the policy process. As such, Lowi agreed with Olson that interest groups could control areas of particular concern to themselves and could deflect the implementation of policies that work against their interests (McFarland, 2010 p.47). The result was that, despite its best intentions, society was unable to achieve its goals and the state had become a “gigantic prehistoric beast, all power and no efficacy” (Lowi, 1969 p.x).

Olson and Lowi’s general theoretical models motivated further, more specific, models of dominant elites in small policy areas. One example of these models was the concept of regulatory capture, of which Stigler was the most noted proponent. Stigler (1975 p.118) argued that “every industry or occupation that has enough political power to utilize the state will seek to control entry [to the marketplace]” through executive agencies working as regulatory bodies. Building on the work of Olson, Stigler argues that the existence of a powerful regulatory body provides large incentives for powerful economic interests (and small incentives for everyone else) to seek to shape the operation of these bodies so that they are in line with the economic interests’ preferences (Laffont and Tirole, 1991 p.1090). Thus regulatory agencies will, instead of attempting to ensure that collective interests are met, operate to distort the object of their regulation in favour of the private interests that have captured them. So, for a classic example, the Interstate Commerce Commission, which was set up in order to check and regulate the railways, was accused of regulatory capture after it allowed railway lines to set artificially high prices and it excluded potential new competitors through restrictive permit regulations (Rothenberg, 1994). In this case, the railway line companies operated as an elite within a small area of policy directly related to the maintenance of their position and wealth.

However, while multiple elite theory and ideas of regulatory capture became the dominant paradigm of the late 1960s and early 1970s, by the 1980s a third wave of theorists had begun to dispute the empirical applicability of Olson’s argument and sought to rebalance the view of the relative levels of power and influence of the state

and interest groups (McFarland, 2007). This school of neopluralists¹⁵ (or “political process theorists”) tried to rescue the pluralist argument in light of the contributions of multiple elite theorists with arguments that stood closer to the optimism of pluralism than the pessimism of multiple elitism. Neopluralists, drawing upon empirical, often quantitative, case studies of certain issues areas, argued that the policy-making process was far more complex, and involves more actors, than implied by multiple elitism (for examples, see Gray and Lowery, 1996, Baumgartner and Leech, 2001, Kingdon, 1995). The neopluralist research paradigm, then, has sought to build models of the policy-making process that stress complexity, unintended causes and multiple variables (Lowery and Gray, 2004 p.167).

One of the major contributions to neopluralist thought was made by Hugh Heclo (1978). In contrast to Stigler’s idea of regulatory capture, Heclo argued that the policy environment was expansive, dynamic and unstable and so unlikely to be dominated by a single actor (Heclo, 1978 p.105). Macro issues in the wider political environment were in part responsible for this instability, but also, instead of only economic actors having a stake in policy, Heclo argued, there is a large number of interested expert actors – academics, regulatory staff, interested politicians and think-tanks – who add to the instability by also seeking to influence policy for reasons that lie outside purely material self-interest (ibid. p.102). Altogether, the existence of these actors, alongside economically self-interested actors, means that policy areas can be characterised as operating pluralistically, where they are surrounded by open, unstable and informal networks mostly made up of experts who all seek to influence the shaping of policy (Waarden, 1992 p.30). Policy, then, is the outcome of the negotiations between these interested actors responding to changes in the wider political environment (Sabatier, 1988 p.130).

Other neopluralist research has sought specifically to address Olson’s view that, following rational incentives, collective-good-motivated groups would not emerge and so private-good groups would dominate. Walker (1983 pp.399-400) argued that collective action groups could (and do) emerge through the support of a patron – in the form of a wealthy individual, a charitable foundation or a government agency – who would provide the necessary start-up finances and support to a “political

¹⁵ As used by McFarland (2007, 2010). Martin Smith (1990) uses the term “reformed pluralism” to refer to roughly the same group of authors and, confusingly, uses neopluralism to refer to authors such as Lowi and Lindblom.

entrepreneur". This funding is important as "large amounts of capital are needed to form most interest groups" hence "the key to success in these efforts usually is the ability of group organizers to secure both start-up funds and reliable sources of continuing financial support and thus to counteract some of the organisational burdens posed by the collective action problem" (ibid. p.403). In contrast to Walker's view of the importance of patrons, Nownes and Neeley (1996 p.119) put forward the idea that an "aggressive, independent" political entrepreneur is the main way that the collective action problem is overcome by interest groups. These political entrepreneurs, often motivated by belief or personal experience, "bear the costs – monetary or otherwise – of organizing meetings, creating an incentive structure, procuring support, and so on" (ibid. p.125).

Policy networks, collective action patrons and political entrepreneurs, then, allow neopluralists to restate the pluralist view that there are forces acting in opposition to, and checking the power of, organised economic interests and, following this point, that elite domination is not the norm (Berry and Wilcox, 2007 p.169). However, an important distinction from the original pluralist view is that neopluralists do not argue that forces would roughly counteract each other and also accept that some policy areas could be characterised by special interest domination, although elite domination is not a state of affairs that is stable and is always open to a changing political environment and to challenge by new groups (Baumgartner and Jones, 1993 p.13).

Alongside neopluralist work on the operation of groups, neopluralists have also stressed the capacity for change, inherent instability or complexity in other parts of the policy-making process. For example, Cohen et al. (1972) and Kingdon (1995) characterise the selection of policies as a "garbage can" from which previously discarded ideas are recycled. For these authors, bureaucracy works as organised anarchy where "imposing a rational explanation on organizational behavior can only distort what is really going on. Choices often just happen, with no clear connection to what participants want. They arise from dynamic organizational processes that are complex, highly contextual, and unpredictable, driven more by accident and timing than individual intention" (Bendor, 2002 p.171).

Similarly, Baumgartner and Jones (1993 pp.12-15) characterise American politics as working on a system of punctuated equilibria; whereby a policy area is largely stable

before a dramatic burst of policy activity that makes many changes and results in a new equilibria being established. One of the main reasons for a period of policy change is due to “waves of popular enthusiasm surrounding a given issue” (Baumgartner et al., 2009 p.83) fuelled by media attention to that issue, changing the established agenda of policymakers. So, instead of elite domination creating policy stagnation, the American system is “continually swept by policy change, change that alternates between incremental drift and rapid alteration of existing arrangements” (ibid. p.236).

As we can see from these various accounts, neopluralism gives a far more nuanced account of the interaction between the state and special interests than either pluralism or economic multiple elitism (McFarland, 2010 p.56). In other words, neopluralism has advanced knowledge by seeking to escape the determinism that characterised earlier paradigms by stressing the possibilities of change within the relationship between government and interest groups and by reasserting the pluralist argument about the push and pull of interest group politics (Burbank, 2005 p.165). Neopluralism also moved away from the “theory rich and data poor” accounts of economic multiple elitism (Arnold, 1982 p.97) and towards more empirical accounts of the relationship between interest groups, society and government. In doing so, neopluralist work has explored some mechanisms of influence used by organised interests such as think-tanks, campaign contributions and lobbying.

However, neopluralist literature has several problems that lead to it being a weak framework for understanding the influence of corporations on policy evolution. First, neopluralist work contains many hidden assumptions about what is important and how business relates to politics. Most notably for a study of corporate power, neopluralist work generally maintains a focus on “ideal-typical voluntary associations of citizens” (Hart, 2004 p.48)¹⁶ and on actions in the political arena; primarily the legislative branch. Yet corporations are not voluntary associations of citizens – they do not have to fundraise, for instance – and when taking political action are not limited to the political arena; as Schattschneider (1960 p.40) noted “it is probably a

¹⁶ Writing in 1976, Dahl and Lindblom note this problem in their original pluralist work: “In our discussion of pluralism we made another error – and it is a continuing error in social science – in regarding businessmen and business groups as playing the same interest-group role as other groups in polyarchal systems, though more powerfully. Businessmen play a distinctive role in polyarchal politics that is qualitatively different from that of any interest group. It is also much more powerful than an interest-group role” (Dahl and Lindblom, 1976, p.xl).

mistake to assume that pressure politics is the typical or even the most important relation between government and business.” By reducing the area of study to the political arena and pressure politics, the power of interest groups is overstated (as it is one of the few domains they can operate in), while many powers of corporations are missed.

Second, while the neopluralist literature covered above does try to characterise large parts of the policy-making process, a significant degree of neopluralist work is separate from the bigger picture. Instead, as part of neopluralism’s move to be “data-rich” by adopting quantitative modelling, neopluralist interest group research has been limited to the small parts of the policy-making process for which quantitative data is available. For example, a number of studies, since the information became readily available in the 1970s, have looked at the influence of business by exploring how PAC contributions influence Congressional votes (see Wright, 1990, Stratmann, 2002, Grenzke, 1989). These studies constitute “looking under the lamp-post”¹⁷ (Milyo et al., 2000 p.76) as they use readily available information that, while comprehensive in the available datasets, does not really aid them in an exploration of influence generally, and business influence in particular. Work exploring PAC contributions has often been theoretically crude, commonly involving the “easy assumption” (Werner and Wilson, 2010 p.266) that the role of these contributions is to buy votes and that business is empowered through vote buying (Hall and Wayman, 1990, Hansen and Mitchell, 2000 p.891).¹⁸ Moreover, PAC contributions are particularly limited measures for understanding corporate power in that they naturally underestimate the degree of corporate involvement because, as discussed above, corporations are subject to strict PAC contribution limits.

While some neopluralists themselves have seen the PAC contributions literature, and neopluralist work more generally, in a pessimistic light (Berry, 1994, Baumgartner and Leech, 1998 ch.9, Lowery and Gray, 2004) more recent literature (2000 onwards) on the political influence of organised interests, which has moved

¹⁷ The phrase, which suggests that investigation is concentrated on areas that are the most easily observable rather than the most pertinent, comes from a joke – “A drunk loses the keys to his house and is looking for them under a lamp-post. A policeman comes over and asks what he’s doing. “I’m looking for my keys,” responds the drunk. Then, pointing across the road, he continues “I lost them over there.” The policeman looks puzzled and asks, “Then why are you looking for them all the way over here?” “Because the light is so much better.””

¹⁸ Baumgartner and Leech (1998, p.186) remark, when considering PAC contribution studies, that “data that come for free are often worth exactly their cost.”

away from just exploring PAC contributions, has not moved significantly away from the problems recognised earlier. So, PAC contributions are now studied alongside lobbying expenditure and soft money donations (e.g. Hojnacki and Kimball, 2001, Ansolabehere et al., 2002, Richter et al., 2009) mainly due to the data now being available (Hansen and Mitchell, 2000 p.892). Since lobbying accounts for significantly greater levels of corporate finance including lobbying is a significant step forward in understanding corporate power. However, focusing just on the observable use of material resources (Leech et al., 2007 p.4) by corporations and the impacts of these resources, this literature retains many of the problems in measuring influence that the PAC studies suffered from (Hillman et al., 2004 p.852). While there are some pieces of work that move beyond this focus and explore more diverse methods of influence (e.g. Smith, 2007, Kimball et al., 2012), these remain the exception, rather than the rule.

More importantly, the main research questions for this recent literature specifically on business influence are not “how influential are certain mechanisms?”, “to what extent are corporations powerful?” or “Who governs?”¹⁹ Instead, reflecting “the never ending pursuit of Olson’s ghost” (Brasher and Lowery, 2006 p.18), the recent literature has again focused its attention on collective action issues and the question “what motivates firms to associate with political institutions and participate in political processes?” (Mathur and Singh, 2011 p.254). So, for instance, Hansen et al. (2005 p.164) clearly displays the two key characteristics of the more recent literature in that they quantitatively explore why some corporations are politically active and others are not, and consider political activity to involve a corporation reporting spending money on a PAC, on lobbying or by giving soft money donations to political parties.

Third, the quantitative approach of neopluralist work and the particular research questions neopluralist scholars have chosen to focus upon has also made the literature overlook other mechanisms of influence and struggle to judge the relative importance of studied mechanisms (Lowery and Gray, 2004 p.168). The neopluralist approach only examines a few pre-defined avenues of influence where quantitative data is possible and, as a body of literature that builds off of the work of others within the field, takes these methods of influence to be the only methods worth exploring;

¹⁹ The more restricted scope of this literature can be seen in the first line of Baumgartner et al. (2009)’s *Lobbying and Policy Change* which reads “Who wins in Washington?”

the sheer weight of the quantitative work on PACs and lobbying has encouraged further research in that direction and, consequently, crowded out the exploration of more complex and multi-dimensional workings of power. Indeed, many intangible variables – such as political ideas or personal beliefs – cannot be factored into the large-*n* neopluralist studies which, in response to the pessimistic accounts of the field, are getting even larger (Hojnacki et al., 2012 p.393).

By reducing the object of study to limited methods of influence (that are, in turn, based on narrow conceptions of power and politics), researchers are in danger of developing tunnel vision and rendering their work only capable of discussing the existence or non-existence of certain mechanisms, but not the importance of such mechanisms. Hence, neopluralism lacks a cohesive central explanatory framework for the successes/failures of powerful interests and the relative importance of different mechanisms of influence (Baumgartner and Leech, 1998 p.175, Petracca, 1992 p.348) which could be used to guide a study of corporate power. Simply put, by producing a “gaggle of models” (Lowery and Gray, 2004 p.168) that do not operate from a shared theoretical outlook (Hojnacki et al., 2012 p.380) or deal with substantive conceptual questions about power, neopluralist interest group theory does not offer a guide for understanding how organised interests – not least corporate ones – influence politics.

Conclusion

This chapter both provided important background information on the operation of organised interests and the American government, and explored the main literature that seeks to characterise the relationship between organised interests and the American government. In reviewing the interest group literature, it was found that, while initially emerging as a field that explored wide questions of power and government, the interest group literature is currently dominated by a research agenda that is limited in the scope of actions it considers, limited in its appreciation of the differences of corporations to other organised interests and characterised by a plethora of competing models concerning details of the policymaking process that do not shed light on bigger questions of power, influence and who governs in society. As such, this chapter has argued that interest group theory – particularly neopluralism – is unsuitable for an exploration of corporate power.

However, while there are problems with the current dominant research paradigm, interest group theory does highlight many of the mechanisms used by corporations (lobbying, campaign contributions, think-tanks, etc) and touches upon many issues of corporate power while not fully exploring them. In light of this situation, the following chapter presents an analytical framework for understanding corporate power and its mechanisms in the US. This framework both draws upon some neopluralist insights and returns to conceptual questions originally posed by interest group theorists.

Bibliography

- Ansolabehere, S., De Figueiredo, J. & Snyder, J. 2003. Why is there so little money in US Politics? *The Journal of Economic Perspectives*, 17, 105-130.
- Ansolabehere, S. & Snyder Jr, J. 2000. Soft Money, Hard Money, Strong Parties. *Columbia Law Review*, 100, 598-619.
- Ansolabehere, S., Snyder Jr, J. M. & Tripathi, M. 2002. Are PAC Contributions and Lobbying linked? New Evidence from the 1995 Lobby Disclosure Act. *Business and Politics*, 4, 131-155.
- Arnold, R. 1982. Overtilled and Undertilled Fields in American Politics. *Political Science Quarterly*, 97, 91-103.
- Austen-Smith, D. 1987. Interest Groups, Campaign Contributions, and Probabilistic Voting. *Public Choice*, 54, 123-139.
- Baker, R. K. 1995. *House and Senate*, New York, W.W. Norton
- Barnum, D. G. 1985. The Supreme Court and Public Opinion: Judicial decision making in the post-New Deal period. *Journal of Politics*, 47, 652-66.
- Baumgartner, F., Berry, J., Hojnacki, M., Kimball, D. & Leech, B. 2009. *Lobbying and Policy Change: Who Wins, Who Loses, and Why*, Chicago, University of Chicago Press.
- Baumgartner, F. & Jones, B. 1993. *Agendas and Instability in American Politics*, Chicago, University of Chicago Press.
- Baumgartner, F. & Leech, B. 1998. *Basic Interests: The Importance of Groups in Politics and in Political Science*, New Jersey, Princeton University Press.
- Baumgartner, F. & Leech, B. 2001. Interest Niches and Policy Bandwagons: Patterns of Interest Group Involvement in National Politics. *The Journal of Politics*, 63, 1191-1213.
- Bendor, J. 2002. Recycling the Garbage Can: An Assessment of the Research Program. *The American Political Science Review*, 95, 169-190.
- Berry, J. M. 1994. An Agenda for Research on Interest Groups. In: Crotty, W., Schwartz, M. A. & Green, J. C. (eds.) *Representing Interests and Interest Group Representation*. Lanham NY: University Press of America.

- Berry, J. M. & Wilcox, C. 2007. *The Interest Group Society*, New York, Pearson Longman.
- Birnbaum, P. 1985. Political Strategies of Regulated Organizations as Functions of Context and Fear. *Strategic Management Journal*, 6, 135-150.
- Boatright, R., Malbin, M., Rozell, M. & Wilcox, C. 2006. Interest Groups and Advocacy Organizations After BCRA. In: Malbin, M. (ed.) *The Election after Reform: Money, Politics, and the Bipartisan Campaign Reform*. Lanham, MD: Rowman & Littlefield.
- Brasher, H. & Lowery, D. 2006. The Corporate Context of Lobbying Activity. *Business and Politics*, 8, 2-21.
- Brown, C. & Waltzer, H. 2004. Virtual Sources: Organized Interests and Democratization by the Web. *The Social Science Journal*, 41, 543-558.
- Browne, W. 1995. *Cultivating Congress: Constituents, Issues, and Interests in Agricultural Policymaking*, Lawrence, University Press of Kansas.
- Burbank, M. 2005. Review: Neopluralism: The Evolution of Political Process Theory. *Perspectives on Politics*, 3, 165-166.
- Cigler, A. J. 1991. Interest Groups: A Subfield in Search of an Identity. In: Crotty, W. (ed.) *Political Science: Looking to the Future, Vol. 4*. Evanston: Northwestern University Press.
- Cohen, M., March, J. & Olsen, J. 1972. A Garbage Can Model of Organizational Choice. *Administrative Science Quarterly*, 17, 1-25.
- Conway, M. M., Green, J. C. & Currinder, M. 2002. Interest Group Money in Elections. In: Cigler, A. & Loomis, B. A. (eds.) *Interest Group Politics*. Washington D.C.: Congressional Quarterly Press.
- Cornwall, A. 2002. *Making Spaces, Changing Places: Situating Participation in Development* [Online]. Available: http://www.powercube.net/wp-content/uploads/2009/11/making_spaces_changing_places.pdf [Accessed 02/05/2013].
- Corrado, A., Mann, T., Ortiz, D., Potter, T. & Sorauf, F. (eds.) 1997. *Campaign Finance Reform: A Sourcebook*, New York: Century Foundation Press.
- Dahl, R. 1961. *Who Governs? Power and Democracy in an American City*, New Haven, Yale University Press.
- Dahl, R. A. & Lindblom, C. E. 1976. *Politics, Economics, and Welfare*, New Jersey, Transaction Publishers.
- Epstein, D. F. 1984. *The Political Theory of The Federalist*, Chicago, University of Chicago.
- Epstein, L. & Rowland, C. K. 1995. Interest Groups in the Courts: Do Groups Fare Better? In: Cigler, A. & Loomis, B. (eds.) *Interest Group Politics*. 4th ed. Washington D.C.: Congressional Quarterly Press.
- Erikson, R. C. & Wright, G. C. 2008. Voters, Candidates, and Issues in Congressional Elections. In: Dodd, L. C. & Oppenheimer, B. I. (eds.) *Congress Revisited*. Washington D.C.: Congressional Quarterly Press.

- Federal Election Commission. 2010. *Contribution Limits* [Online]. Available: <http://www.fec.gov/pages/brochures/contriblimits.shtml> [Accessed 30/01/2008 [through archive.org]].
- Fisher, L. 2005. *Legislative Vetoes After Chadha*. Washington D.C.: Congressional Research Service.
- Gailmard, S. & Jenkins, J. A. 2007. Negative Agenda Control in the Senate and House: Fingerprints of Majority Party Power. *Journal of Politics*, 69, 689-700.
- Goldstein, K. 1999. *Interest Groups, Lobbying, and Participation in America*, Cambridge, Cambridge University Press.
- Gray, V. & Lowery, D. 1996. A Niche Theory of Interest Representation. *Journal of Politics*, 58, 91-111.
- Greenwald, C. 1977. *Group Power: Lobbying and Public Policy*, New York, Praeger.
- Grenzke, J. M. 1989. PACs and the Congressional Supermarket: The Currency is Complex. *American Journal of Political Science*, 33, 1-24.
- Hall, R. L. & Wayman, F. W. 1990. Buying Time: Moneyed Interests and the Mobilization of Bias in Congressional Committees. *The American Political Science Review*, 84, 797-820.
- Hansen, W. L. & Mitchell, N. J. 2000. Disaggregating and Explaining Corporate Political Activity: Domestic and Foreign Corporations in National Politics. *The American Political Science Review*, 94, 891-903.
- Hansen, W. L., Mitchell, N. J. & Drope, J. M. 2005. The Logic of Private and Collective Action. *American Journal of Political Science*, 49, 150-167.
- Hart, D. 2004. "Business" Is Not an Interest Group: On the Study of Companies in American National Politics. *Annual Review of Political Science*, 7, 47-69.
- Hecl, H. 1978. Issue Networks and the Executive Establishment. In: King, A. (ed.) *The New American Political System*. Washington D.C.: American Enterprise Institute.
- Hillman, A. J., Keim, G. D. & Schuler, D. 2004. Corporate Political Activity: A Review and Research Agenda. *Journal of Management*, 30, 837-857.
- Hojnacki, M. & Kimball, D. C. 2001. PAC Contributions and Lobbying Contacts in Congressional Committees. *Political Research Quarterly*, 54, 161-180.
- Hojnacki, M., Kimball, D. C., Baumgartner, F. R., Berry, J. M. & Leech, B. L. 2012. Studying Organizational Advocacy and Influence: Reexamining Interest Group Research. *Annual Review of Political Science*, 15, 379-399.
- Jordan, G. 1990. The Pluralism of Pluralism: An Anti-theory? *Political Studies*, 38, 286-301.
- Kang, M. S. 2010. After Citizens United. *Indiana Law Review*, 44, 243-301.
- Kimball, D. C., Baumgartner, F. R., Berry, J. M., Hojnacki, M. & Leech, B. L. 2012. Who Cares about the Lobbying Agenda? *Interest Groups & Advocacy*, 1, 5-25.
- Kingdon, J. 1995. *Agendas, Alternatives, and Public Policies*, New York, HarperCollins.

- Koger, G. 2010. *Filibustering: A Political History of Obstruction in the House and Senate*, Chicago, University of Chicago Press.
- Kollman, K. 1998. *Outside Lobbying: Public Opinion & Interest Group Strategies*, New Jersey, Princeton University Press.
- Laffont, J. & Tirole, J. 1991. The Politics of Government Decision-making: A Theory of Regulatory Capture. *The Quarterly Journal of Economics*, 106, 1089-1127.
- Leech, B. L., Baumgartner, F. R., Berry, J. M., Hojnacki, M. & Kimball, D. C. 2007. Does Money Buy Power? Interest Group Resources and Policy Outcomes. *Annual Meeting of the Midwest Political Science Association*. Chicago.
- Lindblom, C. E. 1977. *Politics and Markets: The World's Political Economic Systems*, New York, Basic Books.
- Lord, M. 2000. Corporate Political Strategy and Legislative Decision Making: The Impact of Corporate Legislative Influence Activities. *Business & Society*, 39, 76.
- Lowery, D. & Gray, V. 2004. A Neopluralist Perspective on Research on Organized Interests. *Political Research Quarterly*, 57, 164-175.
- Lowi, T. 1967. The Public Philosophy: Interest-Group Liberalism. *The American Political Science Review*, 61, 5-24.
- Lowi, T. 1969. *The End of Liberalism*, New York, W. W. Norton & Company.
- Madison, J. 2010. *The Federalist no.10* [Online]. Available: <http://www.constitution.org/fed/federa10.htm> [Accessed 05/08/2010].
- Magleby, D. B. 2010. Political Parties and Consultants. In: L. Sandy Maisel, J. B. (ed.) *The Oxford Handbook of American Political Parties and Interest Groups*. Oxford: Oxford University Press.
- Mann, T. E. & Ornstein, N. J. 2008. Is Congress Still the Broken Branch? In: Dodd, L. C. & Oppenheimer, B. I. (eds.) *Congress Revisited*. Washington D.C.: Congressional Quarterly Press.
- Mathur, I. & Singh, M. 2011. Corporate Political Strategies. *Accounting & Finance*, 51, 252-277.
- Mayer, K. R. 1999. Executive Orders and Presidential Power. *The Journal of Politics*, 61, 445-466.
- McFarland, A. S. 1987. Interest Groups and Theories of Power in America. *British Journal of Political Science*, 17, 129-147.
- McFarland, A. S. 2007. Neopluralism. *Annual Review of Political Science*, 10, 45-66.
- McFarland, A. S. 2010. Interest Group Theory. In: Maisel, L. S. & Berry, J. (eds.) *The Oxford Handbook of American Political Parties and Interest Groups*. Oxford: Oxford University Press.
- Milyo, J., Primo, D. & Groseclose, T. 2000. Corporate PAC Campaign Contributions in Perspective. *Business and Politics*, 2, 75-88.
- Nownes, A. & Freeman, P. 1998. Interest Group Activity in the States. *The Journal of Politics*, 60, 86-112.

- Nownes, A. & Neeley, G. 1996. Public Interest Group Entrepreneurship and Theories of Group Mobilization. *Political Research Quarterly*, 49, 119.
- Olson, M. 1971. *The Logic of Collective Action: Public Goods and the Theory of Groups*, Cambridge, MA, Harvard University Press.
- Ortiz, D. 2008. The Difference Two Justices Make: FEC v. Wisconsin Right to Life, Inc. II and the Destabilization of Campaign Finance Regulation. *Albany Government Law Review*, 1, 141-168.
- Petracca, M. P. 1992. *The Politics of Interests*, Boulder, Colorado, Westview Press.
- Polsby, N. 1963. *Community Power and Political Theory*, New Haven, Yale University Press.
- Poole, K. T. & Rosenthal, H. L. 2011. *Ideology and Congress*, New Jersey, Transaction Publishers.
- Richardson, J. 2000. Government, Interest Groups and Policy Change. *Political Studies*, 48, 1006-1025.
- Richter, B. K., Samphantharak, K. & Timmons, J. F. 2009. Lobbying and Taxes. *American Journal of Political Science*, 53, 893-909.
- Rothenberg, L. 1994. *Regulation, Organizations, and Politics: Motor Freight Policy at the Interstate Commerce Commission*, Ann Arbor, University of Michigan Press.
- Sabatier, P. 1988. An Advocacy Coalition Framework of Policy Change and the Role of Policy-oriented Learning Therein. *Policy Sciences*, 21, 129-168.
- Schattschneider, E. E. 1960. *The Semisovereign People*, Hinsdale, Illinois, The Dryden Press.
- Schlozman, K. 2010. Who Sings in the Heavenly Chorus? The Shape of the Organized Interest System. In: Maisel, L. S. & Berry, J. (eds.) *The Oxford Handbook of American Political Parties and Interest Groups*. Oxford: Oxford University Press.
- Schlozman, K. L. & Tierney, J. T. 1986. *Organized Interests and American Democracy*, New York, Harper & Row
- Shepsle, K. A. & Weingast, B. R. 1987. The Institutional Foundations of Committee Power. *The American Political Science Review*, 81, 85-104.
- Shughart, W. 1997. Interest Groups and the Courts. *George Mason Law Review*, 6, 953-970.
- Sinclair, B. 1986. The Role of Committees in Agenda Setting in the US Congress. *Legislative Studies Quarterly*, 11, 35-45.
- Smith, M. 1990. Pluralism, Reformed Pluralism and Neopluralism: The Role of Pressure Groups in Policy-making. *Political Studies*, 38, 302-322.
- Smith, M. A. 2007. *The Right Talk: How Conservatives Transformed the Great Society into the Economic Society*, New Jersey, Princeton University Press.
- Sorauf, F. 1992. *Inside Campaign Finance: Myths and Realities*, New Haven, Yale University Press.

- Stigler, G. 1975. *The Citizen and the State: Essays on Regulation*, Chicago, University of Chicago.
- Stratmann, T. 2002. Can Special Interests Buy Congressional Votes-Evidence from Financial Services Legislation. *Journal of Law and Economics*, 45, 345-374.
- Truman, D. 1951. *The Governmental Process*, New York, Knopf.
- Vogel, D. 1996. *Kindred Strangers: The Uneasy Relationship Between Politics and Business in America*, New Jersey, Princeton University Press.
- Waarden, F. 1992. Dimensions and Types of Policy Networks. *European Journal of Political Research*, 21, 29-52.
- Walker, J. 1983. The Origins and Maintenance of Interest Groups in America. *The American Political Science Review*, 77, 390-406.
- Walker, J. 1991. *Mobilising Interest Groups in America: Patrons, Professions, and Social Movements* Ann Arbor, University of Michigan Press.
- Werner, T. & Wilson, G. 2010. Business Representation in Washington D.C. In: Coen, D., Grant, W. & Wilson, G. (eds.) *The Oxford Handbook of Business and Government*. Oxford: Oxford University Press.
- Wolfinger, R. E. 1973. *The Politics of Progress*, New Jersey, Prentice Hall.
- Wright, J. 1996. *Interest Groups and Congress*, London, Allyn and Bacon.
- Wright, J. R. 1990. Contributions, Lobbying, and Committee Voting in the US House of Representatives. *The American Political Science Review*, 79, 417-438.
- Wright Mills, C. 1956. *The Power Elite*, Oxford, Oxford University Press.
- Zackin, E. 2008. Popular Constitutionalism's Hard When You're Not Very Popular: Why the ACLU Turned to Courts. *Law & Society Review*, 42, 367-396.

Chapter 3 – Corporate Power: A Framework

As chapter two demonstrated, interest group theory provides an insufficient analytical framework for understanding the influence of corporations on US national policy evolution due, in the main, to a weak conception of power, a lack of a central explanatory framework and an examination of a limited number of mechanisms of influence. Interest group theory does, however, offer some insights into how corporations (and organised interests more generally) are able to influence the policy making arena.

As such, there is a large gap in the interest group literature as regards understanding the power of corporations in the US. Because of the importance of the issue, however, in this gap has developed a common understanding of corporate power as the product of campaign contributions, lobbying and interpersonal connections; as Werner and Wilson (2010 p.266) note there exists an “easy assumption, so often made by journalists and activists, that campaign contributions purchase Congressional votes”. This common understanding of corporate power, which has developed in tandem with increased public hostility to big business (Berry and Wilcox, 2007), requires viewing Washington D.C. as a cesspit of corruption and cronyism – the best democracy money can buy – with corporate victories all but assured.

This chapter challenges such a view, arguing that corporate power is complex, multi-faceted and contingent. In order to do so, this chapter combines mechanisms of corporate influence identified by interest group theorists and by political economists with a framework for understanding different forms of power. The purpose of such an exercise is to produce a clear, comprehensive and robust understanding of corporate power that reconciles material and ideational forms of power and that can help to explain the many mechanisms of influence used by corporations to alter US oil dependence policies. Such a framework is crucially important for the thesis as, as Hacker and Pierson (2002 p.279) state, “a central task for studies of business power is to specify the ways in which influence is exerted in the political process”. In creating a framework, this chapter returns to many of the conceptual and empirical questions that motivated early interest group research and offers an original conceptualisation of corporate power in the US.

Laying the foundations of this synthesised framework, this chapter starts by giving a

general overview of the political economy literature, its many views on corporate power and the most advanced attempt to create a framework of corporate power. Using the works of Lukes and Gaventa, this chapter moves on to defining a three dimensional view of power and explaining how the concept of power is understood in this thesis. With these two components in place alongside the interest group literature, mechanisms of corporate influence are then combined with the three dimensional concept of power, to produce a framework of corporate power that is used as the foundation for the focus of the empirical chapters and which, in the discussion chapter, is built upon and strengthened using the empirical findings.

The Political Economy of Corporate Power

Like early interest group theory²⁰, the central thrust of a great deal of earlier political economy literature is to understand who is powerful and how they are powerful. Specifically, authors have tried to analyse how capitalism and democracy work together. Three main bodies of literature can be identified: power elite (e.g. Wright Mills, 1956, Domhoff, 1990, Useem, 1986), neo-Gramscian (e.g. Cox, 1983, Gill and Law, 1989, Overbeek and van der Pijl, 1993) and structuralist (e.g. Lindblom, 1982, Przeworski and Wallerstein, 1988, Block, 1977). These three literatures respectively focus upon the personal interlinkages between business and political elites, the construction of ideas and values that support business interests, and how business is empowered in politics by the role that business plays within the market. All three offer different and useful insights that are drawn on below in the framework. However, this literature does not itself provide a framework for understanding how corporations can influence individual policies while working as political actors, but largely how business as a class of actor is structurally powerful in relation to the state (Coen et al., 2010 p.26); it operates at a higher level of abstraction, heavily focuses on structures (Bell, 2012 p.661) rather than actors, and does not deal with influence on specific policy. The research emphasis “is on the way power resides in particular enduring institutional arrangements, rather than being dependent on control over separate decisions” (Moran, 2009 p.7).

These classic debates over the origin of business power within states have been

²⁰ Unsurprisingly, perhaps, as many of the theorists – particularly C. Wright Mills and Charles Lindblom – were very much engaged in American interest group debates.

largely absent in recent years. For instance, Hacker and Pierson (2002 p.277) state that “with the growing interest in ‘the state’ and institutions, the debate over business power essentially ended” and Culpepper (2011) argues that “the study of business power is currently more neglected than it has been for the last half century”. This neglect was caused by many of the primary political economy research questions shifting to understanding (neoliberal) globalisation and the role of the nation-state within a global economy; “that is – the dominant research questions pertain to the nature and impact of globalisation, and have largely been formulated for the purposes of pushing forward the theorisation of globalisation” (Phillips, 2005 p.339). This political economy literature has covered various issues that speak to questions about business power in the US, but do not directly answer them, nor necessarily seek to do so (Ougaard, 2008 p.387).

So, for instance, the literature on global governance explores the role of various actors in determining the rules, norms and institutions according to which the global economy is run (e.g. Wilkinson, 2005, Scholte, 2002, Collin et al., 2002, Strange, 1994). Within this broad literature, questions of the role of transnational corporations in contributing to global rules, norms and institutions are asked and the issue of corporate power is discussed in relation to a wide range of subjects. Similarly, literature on the regulatory state concerns the evolving relationship between the market, the state and other actors, particularly in the provision of goods (e.g. Majone, 1999, Moran, 2002, Gilardi, 2009, Moran, 2010). In its consideration of business power, this literature discusses matters such as the rise of private regulation, self-regulation and “wiki” regulation (Grabosky, 2012, Wolf, 2010, Levi-Faur, 2013) within the context of a more co-operative relationship between business and government than in previous “command and control” system. In both of these governance and regulatory state literatures, then, corporations feature as important parts of the discussion and provide points that are drawn upon below, but do not offer a clear analytical guide for the study of corporate influence on particular policies as the focus is on how the international system, or the state, is governed.

Yet within the shift to studying globalisation and its impact, two streams of political economy literature more directly considering the power of business have evolved from the earlier debates and have continued to ask questions about business power, but in a global, rather than national, context. The first stream of literature, combining

power elite and neo-Gramscian approaches, understands business power as the product of a ruling transnational capitalist class and an ideological hegemony (in the form of neoliberalism) underpinning the rule of this class (e.g. Carroll, 2010, Sklair, 2000, Heemskerk et al., 2012, Robinson, 2005). The focus of this literature is on investigating how and why states across the world rule in the interests of capital; how the dominant class maintain their power and unequal status within democratic systems without constant recourse to violence. As such, this literature retains the focus on structures and explaining the broad picture but not potential corporate control over individual decisions.

The second literature, while informed by it, is less of a direct descendant of the questions motivating the older literature, and has been shaped by exploring the fight against both climate change science and policy by corporate actors. It is within this embryonic political economy literature that the power of corporations working as individual actors, or as industry-specific coalitions, is the focus of attention (e.g. Underhill and Zhang, 2008, Clapp and Swanston, 2009, Dauvergne and Lister, 2010, Meckling, 2011). As such, it is this stream of literature that most directly engages with understanding the corporation working as a political actor and influencing individual decisions.

The most notable and relevant work in this stream is that of Fuchs (2005, 2007), who presents a broad tripartite framework of “institutional”, “structural” and “discursive” corporate power, which is largely drawn from Levy and Egan’s (2000) attempt to order the three strands of older political economy literature identified above as different lens for the analysis of corporate power. Institutional power, which actually draws more from American interest group literature, primarily refers to lobbying and campaign contributions and is measured through outcome success in the political arena (Fuchs, 2007 p.57). Structural power refers to mechanisms such as capital mobility and private regulatory roles, and is understood to work as setting the agenda from which government policy is made (ibid. ch.5). Finally, discursive power refers to the perceived legitimacy of actors, attempts to improve this legitimacy and the framing of topics (ibid. ch.6).

While this framework has come furthest to giving an analytical framework of corporate power, there are several conceptual problems stemming from the framework’s genesis as a review and classification of divergent literatures; in

particular many of its weaknesses come from assumptions adopted from interest group theory. First, Fuchs' understanding of structural power, which is a term that normally refers to the important structural position of business resulting in politicians having to pay attention to the business without action on the part of the business, includes such mechanisms as public-private partnerships and participation in rule making (i.e. active work by the corporations) that could more easily be seen as a form of instrumental (or direct) power (Ougaard, 2008 pp.399-400). Without these mechanisms, Fuchs' structural power appears a much hollower category in terms of the mechanisms of influence it includes. Second, perhaps explaining the inconsistency in structural power, Fuchs' framework only considers corporations as political actors in so far as they are "participants in the political process". This definition, which also exists in the interest group literature, limits politics to the political arena, rather than influence on society. While this point is expanded on below, Néron (2010 p.337) briefly makes the counterpoint: "if politics is about the immense question "who must do what for whom?", then there is no doubt today that businesses are successful political actors".

Third, the understanding of discursive power is more focused on observable action and political communication, rather than deeper structural notions of hegemony or the third face of power. In doing so, the distinction between instrumental and discursive power is severely weakened, as "it is hard to imagine any kind of lobbying or other kind of instrumental power except the direct use of force that doesn't have an ideational and discursive component" (Ougaard, 2008 p.401). Combined, these three issues render Fuchs' framework insufficiently coherent for an exploration of the case studies; it a useful starting point that is drawn upon in the thesis but is not the fundamental basis of this research. Additionally, the political economy literature (of which Fuchs is a part) tries to understand corporate power in a global/transnational/international context; the research questions are about who is powerful and how they are powerful in international political arenas. So, this literature highlights certain mechanisms of influence – such as the political leverage corporations have due to decisions over foreign direct investment (Jensen et al., 2012 pp.4-5) – that make little sense in the context of national politics in the most powerful country in the world.

So, in the main, the political economy literature is very strong at discussing many

mechanisms of business power while debating related topics. Yet the problem with the literature for the thesis is that individual corporations are rarely understood (or researched) as political actors effecting specific policies; how the corporate elite can maintain their economic and political position (for example) is considered, but not the mechanisms by which corporations can influence particular policies. In contrast, the interest group literature seeks to explain the influence of organised interests (including business) working as actors on policy, but limits the mechanisms of influence. There is thus a gap between the two literatures, into which the work of Fuchs, and others inspired by corporate actions in regards to climate change, has recently stepped. Yet, by bridging the gap with a framework based upon divergent literatures there is a degree of conceptual unevenness; the framework is a *bricolage*, rather than a synthesis. What is lacking from the framework, and from the literature on corporate power more generally, is a strong theoretical grounding in the concept of power that can help locate different mechanisms of influence. As such, it is to the question of power which this thesis now turns.

Power

Starting with Dahl, a central question of interest group theory was “what is power?” as an answer to this question would allow a determination of who governs and who is powerful in the political arena. Dahl’s (1957 pp.202-203) answer to this question was “my intuitive view of power, then, is this: *A* has power over *B* to the extent that he can get *B* to do something that *B* would not otherwise do”. This view of power (later called the first face of power) is a useful starting point for understanding how one individual or group has power over another individual or group. However, Dahl’s research agenda coming from his intuitive view of power focused only on observable conflict; on the successes or failures of actors involved in key issue areas (which in 1950s New Haven, he identified as urban redevelopment, public education, and nomination for local office) in the political arena (Dahl, 1961 p.175).

Dahl’s position was criticised by Bachrach and Baratz, who argued his focus on “key” issue areas was working after power had been exercised to remove issues from the policy-making agenda (McFarland, 2007 p.60). Thus, following Dahl’s established format, Bachrach and Baratz (1962 p.948) added that

“power is also exercised when A devotes his energies to creating or

reinforcing social and political values and institutional practices that limit the scope of the political process to public consideration of only those issues which are comparatively innocuous to A. To the extent that A succeeds in doing this, B is prevented, for all practical purposes, from bringing to the fore any issues that might in their resolution be seriously detrimental to A's set of preferences."

This "second face of power" was intended to complement Dahl's research agenda, broadening the focus of research to include non-issues and the mechanisms that render issues non-issues. However, for the second face of power it is important "to distinguish the deliberately engineered suppression of an issue from its unintended de facto exclusion" (Bernhagen, 2002 p.9) so that the absence of an issue from the political agenda is not assumed to be down to power, when it could be due to such issues as irrelevance, absurdity or lack of interest. The most notable application of this idea of power was Crenson's (1971) exploration of air pollution in several US cities.

While warning that power is one of Gallie's (1955) "essentially contested concepts", Lukes introduced the third face of power. Utilising the insights of Gramsci, and others, Lukes developed an account of power that concerned ideological hegemony and existed alongside both the first and second faces of power. Lukes (1974 p.23), again following Dahl's format, puts it thus:

"A may exercise power over B by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping or determining his very wants. Indeed, is it not the supreme exercise of power to get another or others to have the desires you want them to have – that is, to secure their compliance by controlling their thoughts and desires?"

Research into the third dimension thus has to examine control over the political agenda, the "real" and subjective interests of people and attempts at indoctrination.

By this point the divergence between interest group theory and power theory was complete and the issue of power had moved into political theory; how power was conceived by Lukes was not generating an empirical research agenda in US interest group theory, unlike with the previous two forms of power (McFarland, 2007 p.62, Wanna, 1991). The interest group literature, as seen in the previous chapter, was

also moving from the descriptive accounts, which informed Dahl and his contemporaries, to “tightly circumscribed and statistically advanced investigations of group power” (Baumgartner and Leech, 1998 p.187) that, instead of engaging with questions of power, “simply ignored the problem” (ibid.) of measuring power and influence. While the US interest group literature paid little attention to the third face of power, John Gaventa, one of Lukes’ PhD students, utilised Lukes’ framework to study power and quiescence in Appalachian mining communities (Gaventa, 1980). Yet, methodological issues concerning the empirical detection of real interests (Hyland, 1995 pp.205-207), as separate to perceived or surface interests, dogged Lukes’ account of power and, in spite of Gaventa’s efforts, an empirical third face literature did not develop (Shapiro, 2006).

Following the faces of power debates, the power debate in political science then, with the work of the French social theorists such as Bourdieu, Lefebvre and Foucault, shifted its focus to a contextual, shifting and discourse-centred understanding of power. These writers introduced innovative ways of understanding power and the role of ideas in shaping power. For instance, Bourdieu introduced the concept of “habitus”, which is the “dialectic of the internalization of the externality and the externalization of the internality” (Bourdieu, 1977 p.72) and, rather than accepting one over the other, reflects the constant interplay between agency and structure in power relations. Likewise, Foucault conceives of power as intimately linked with knowledge – to the extent he uses the term power/knowledge – and that power/knowledge can be coercive in that it limits “thinking space” by legitimating certain ways of thinking and certain forms of discourse (Foucault, 1980 pp.111-114). However, Foucault, and other post-structuralists, worked “in an excessively rhetorical style entirely free of methodological rigour” (Lukes, 2005 p.61) that has subsequently led to “obscurantist” works that favour jargon over clarity.

While both the post-structuralist account of power and the two-faced account of power are still very much dominant in political science, Gaventa and others at University of Sussex have recently developed a framework for understanding power called the “powercube” (<http://www.powercube.net/>). Primarily, the powercube was made for the field of development studies, and is intended to provide a framework for power analysis by academics and activists in the context of an increasingly inter-connected world in order to provide the capacity for resistance. As such, it considers

the *forms* of power (which are based upon the three faces of power), the *spaces* that power operates in and the *levels* at which it operates at. These different aspects of power are visually represented in the form of a cube, which serves to highlight how these aspects are not separate, but interlocking and mutually-reinforcing (fig 3-1).

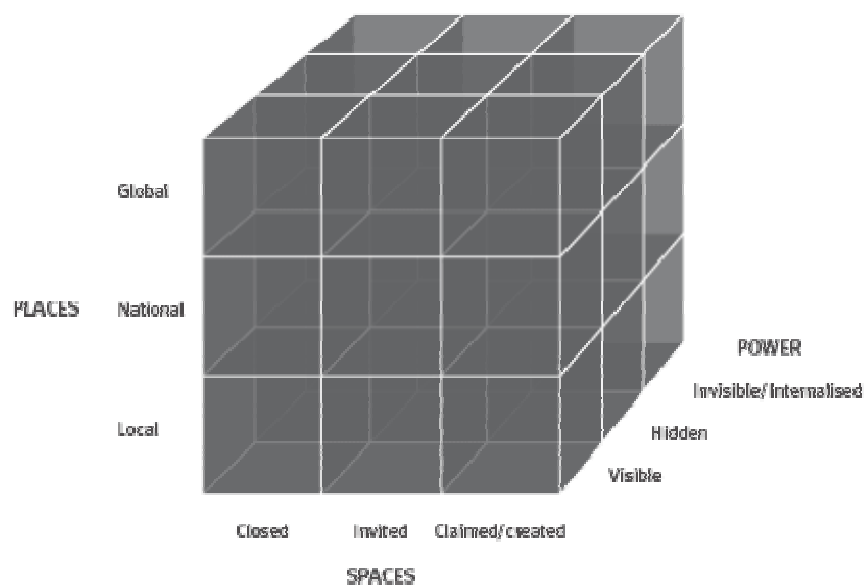


Figure 3-1: The Power Cube

Source: Ministry of Foreign Affairs of Denmark (2012)

The spaces of power refer to the arenas for action and participation by interested groups, and are closely linked to the idea of access discussed in the previous chapter. Gaventa's conception of the powercube sees the spaces as divided into claimed, invited and closed spaces (Oxfam, 2011). Claimed spaces refer to the spaces that non-powerful actors make to air grievances outside of formal, already-existing spaces of power. However, the relevance of claimed spaces to this thesis, which examines the actions of powerful actors, is limited and, as such, claimed spaces do not feature in the deployment of the powercube in the thesis. Invited spaces are spaces where the opportunity for participation is subject to the invitation of a powerful body or agent, such as Congressional hearings, or the meetings that support regulatory body rulemakings. Closed spaces are those where decisions are made behind closed doors, with little oversight from the public or others. Both invited and closed spaces (and the spaces that have features of both these classifications) are important to, and will be covered by, this thesis as the degree of access to such spaces is an important facilitator of influence and, as such, can be considered to be one of the primary indicators of the power of an organised interest (Dye et al., 2011

p.172).

The levels of power refer to the politico-geographic location that decisions are being made at. The powercube divides the levels into local, national and global, although also mentions other levels such as the household or personal level. This study is primarily of national policy-making, as the motivating research problem (oil dependence) exists, alongside the potential tools to solve or ameliorate oil dependence, at the national level. The other levels of power are engaged with to the extent that the other levels (state- and global-level) impact upon, and interact with, the national level. For example, in the case of both CAFE standards and hydrogen, the state of California was heavily involved and so policy evolution actions there are included.

These elements of the powercube, while important in general terms, are not particularly salient to this thesis. In fact, the weighting of them in the powercube reflects the intended use of the powercube as an emancipatory tool for disempowered groups (Gaventa, 2006 p.25), rather than an analytical tool for understanding powerful groups; it favours *power to* – understood as the capacity to achieve change, which is a forward-looking concept – instead of *power over* – the capacity to control. Such an approach is problematic for the goals of the powercube, since powerful actors often determine the capacity of other actors to achieve change. In other words, understanding *power over* is a prerequisite for any emancipatory project but is de-emphasised by the powercube, thereby weakening its emancipatory power.

As such, with the limited usefulness of some of the spaces and levels of power for this research project, the first point of analysis for this thesis, and the focus, is the forms of power. The forms of power, in the powercube's conceptualisation of them, do not rely on Dahl's formulation of "A has power over B" and are more cognizant of the application of the theory in research. In particular the third/invisible face has been reformulated so that it largely avoids the issue of real and false consciousness that dogged Lukes' account.²¹ As such, the powercube's conceptualisation of the faces/forms of power is worth exploring. Visible power is power that operates openly and conspicuously. In US politics, visible power works in policy-making arenas, and

²¹ In recent years, Lukes (2005, p.145) has moved to an adoption of a non-essentialist and multiple account of real interests in response to earlier criticisms.

in a transparent, clear and obvious manner. The detection of visible power involves exploring who participates, whose interests prevail and who is vested with formal authority. Like in Dahl's work, the focus is on decisions and who is making them.

Hidden power moves beyond the open actions, exploring the manipulations that occur behind the scenes. As with visible power, hidden power has the capacity to be observed, although the possibility of unimpeded observation is much lower. Hidden power is operating when "alternative choices are limited, less powerful people and their concerns are excluded, and the rules of the game are set to be biased against certain people and issues" (Powercube.net, 2012a), or, as Schattschneider (1960 p.71) argued, when "some issues are organized into politics while others are organized out". Hidden power, then, can work to exclude the interests of weak actors from, and include powerful actor interests in, formal or informal decision-making procedures, and is detected through the exploration of decision-making mechanisms, elite interpersonal relations and the indirect representation of interests by seemingly-impartial secondary actors.

Finally, invisible power moves beyond actions to the power of ideas and thoughts. It comes in the form of the legitimating discourses that support the powerful, that discourages minor actions against the interests of the powerful, and tries to exclude the possibility of serious action against their interests entirely. Invisible power, then, is similar to Gramsci's notion of hegemony, where "political leadership [is] based on the consent of the led, a consent which is secured by the diffusion and popularization of the world view of the ruling class" (Bates, 1975 p.325) and Marx and Engel's (2002) view that "the ruling ideas of each age have ever been the ideas of the ruling class".

The mechanisms that facilitate invisible power are many and varied. As VeneKlasen et al. (2007 p.48) state "schools, the media, and religious and political leaders, among other influential forces, shape values and norms that prevent change." In some dictatorships these mechanisms have been used to create cults of personality that cement the concrete power of repressive coercion with ideational attraction. Equally, many (enemy/disapproved/"rogue") states are accused of using propaganda to manipulate and brainwash their citizens. In western states, the news media have been highlighted as one of the main mechanisms for inculcating values and intentionally screening information so that some issues or events (say 9/11) get more

attention than others (such as civilian deaths in the Iraq war) (Herman and Chomsky, 1988). Working in such a manner, political actors can manipulate the public (and other political actors) and rely on established arguments to offer a convincing argument for a certain policy that deceives others as to the outcomes of the policy.

However, “‘invisible power’ need not be limited to intentional acts of ‘thought control’ by the powerful, but can also be seen as self-reproducing social processes in which the thinking and behaviour of the powerful and powerless alike are conditioned by pervasive norms” (Powercube.net, 2012b). Limiting the exploration of invisible power to only intentional acts would likely entail omitting significant amounts of invisible power, as once an idea becomes established by conscious action, its survival and success at empowering can be reliant only on unconscious repetition rather than continued attempts to push the idea (Lindblom, 1977 p.206, Hayward and Lukes, 2008).²²

Moreover, unconscious repetition of ideas is often embedded in, enabled by, and works through, language itself. Dominant meanings of words/concepts do become established – through both active machinations and passive replications – which shape societal perception and ideas. The result of dominant meanings is that some arguments become self-evident and certain actions become legitimate; ideological bias is introduced into language and is internalised. For instance, terms such as “freedom” can become laden with an ideological baggage that limits the debate to a few similar conceptions of the idea. At the same time as certain actions are legitimised, other actions are delegitimised, with some arguments coming to seem as if detached from “reality”. For example, the British 1819 Cotton Factories Regulation Act, which banned children under the age of nine from working in cotton factories, was objected to on the grounds that it restricted the free market and the freedom of people (Blaug, 1958).²³ However, modern-day free market advocates, while calling for freeing the market, would not even consider campaigning for the deregulation of child labour (Chang, 2010 p.23). The difference is that the dominant conception of the free market has changed, thus changing what actions are seen as legitimate and what associations are made; employing children under the age of nine is no longer

²² It can be reasonably difficult to analytically separate deception through invocation of certain beliefs and genuine belief in dominant discourses.

²³ Opponents of the bill also argued that “shortening the time of labour, as proposed in the Bill, would promote indolence and profligacy, in affording [work-people] time to go to the public houses at night, and to be otherwise disorderly” (Anon, 1819)

considered to be legitimate in most of the world (International Labour Organisation, 2013), or even a matter to do with the freedom of the market.

In this sense, the complete victory of invisible power of one actor would be the calcification of thought; people, including the powerful, would always have to think within certain trammels. However, there will always be contending discourses and ideas that sustain opposition to the dominant discourse, although the extent of opposition will be contingent on a number of factors. So, instead of the calcification of thought, invisible power generally works to channel thought along the lines of particular discursive currents, to focus attention on one aspect rather than another, and to explain the current order as both natural and legitimate; invisible power seeks to create a set of common sense “notions or theses with which one argues but over which there is no argument” (Bourdieu and Wacquant, 2001 p.1). Even for both those more taken with different (but not opposing) discursive currents and for those who reject the main aspects of the dominant discourse, their view of what is possible is still conditioned by the existence of the discourse. The detection of invisible power, then, involves exploring the language used by prominent figures, the assumptions used by policymakers that are considered so self-evident as to not require explanation and the repetition of arguments by various actors and the media; when looking at powerful actors it involves the exploration of how “loud” the actors can be (unlike in Gaventa, 1980, where the silence of powerless actors was explored) Moreover, while the origins of invisible power may not be traceable or observable (Fuchs, 2005 p.23), who is empowered, and who continues to be empowered, by the dominant discourse is observable without recourse to imputing real interests or real consciousness (e.g. Lukes, 2005 p.148). Invisible power, then, is somewhat of a misnomer. Invisible power is not invisible, as it can be identified in a number of ways. The main distinction between it and other forms of power is that it is less concrete, less wieldable, and can sustain itself far beyond the actions that created it.

There are three main advantages of this conceptualisation of the forms of power, then, over other approaches. The first advantage is that the powercube offers the insights of the community power debates without relying on the terminology that evolved as part and parcel of those debates; the formulation “A has power over B”, which gives a very agent-centred idea of power, is dropped. Losing the formulation allows the powercube’s formulation of invisible power to be more comprehensive by

including structural elements more readily (Gaventa, 2006 p.29). The original formulation also encouraged a view of power as something that only exists when being exercised, rather than as a capacity that may not ever need to be exercised to achieve its goals (Lukes, 2005, p.12); as Crenson (1971 p.177) notes “the mere reputation for power, unsupported by acts of power, can be sufficient to restrict...decisionmaking”. As such, in this regard the powercube is more conceptually coherent and so better suited for exploring questions of power than the three dimensions of power.

The second advantage is that, in being designed for activists and utilising a visual representation, the powercube is clear, concise and easily explicable while covering the difficult and multi-faceted issue of power. In contrast, post-structuralist analysis often relies on an abstract, impenetrable and obscurant exposition of power which favours abstract fluidity – in line with a subjectivist notion of reality – over analytical clarity (Lukes, 2005 pp.88-107). The advantage of the powercube for the thesis, then, is that it operates as a clear framework that can guide the analysis of a complex and messy issue, such as corporate power, rather than operating as an indeterminate and shifting framework guiding analysis of a complex and messy issue.

The third advantage is that, not only does it allow an exploration of the intangible elements of power, the powercube also forces the investigator to keep in mind the material and concrete machinations of an actor or organisation; analysis of material factors is not subsumed by analysis of the ideational factors, or vice versa (Shapiro, 2007 p.20). Unlike in both interest group theory, and in post-structuralist analysis, no single form of power comes to dominate due to the framework of analysis allowing both material and ideational factors, and their interplay, to be explored. Instead, the importance of the different forms can be judged according to the available data.

Understanding Corporations using the Forms of Power

The following sections utilise, draw upon and synthesise a number of literatures that have captured elements of corporate power so as to provide an analytical framework that can be applied and discussed in the case study chapters. The first literature, while its weaknesses were highlighted in the previous chapter, is neopluralist interest group theory, as neopluralists have covered many of the (more directly observable) mechanisms of influence. The second literature is, loosely defined, the outliers of

mainstream interest group literature that have shed light on some of the more hidden and closed off elements of corporate power. The third is the political economy literature that, as mentioned above, has engaged with questions of corporate power in a variety of ways. Finally, there is also a literature (mainly from academics in the discipline of public health) on the tobacco industry that, utilising a mass of internal documents released following court order, presents the most complete account of the political manoeuvres of a group of corporations in one industry and can highlight how many of the identified mechanisms have previously been used. These four literatures have been synthesised and are expressed as operating in the terms of the Gaventa's forms of power below.

Applying Gaventa's tripartite understanding of power to the mechanisms of corporate power highlighted in the literature has two main advantages. First, it breaks the concept of power down, allowing the analytical subdivision of power so as to increase the understanding of individual constitutive elements and how different elements fit together; it facilitates an understanding of the power of corporations as multifaceted, rather than monolithic (see, for an example of a monolithic view of corporate power, Suarez-Villa, 2012), and allows an analysis of how different influence mechanisms co-operate. Second, by highlighting how corporations have previously influenced policy evolution (and business-state relations) it lays the groundwork that the case studies build upon, and that further empirical research could utilise.

Visible Power

The most noted elements of corporate visible power are lobbying and campaign contributions, which were covered in the previous chapter. In addition to these mechanisms of influence, further corporate visible power, either in the form of direct private authority or significant command resources, primarily stems from the public functions that corporations perform within a market-based society (Galbraith, 1972 ch.5). As Lindblom (1977 p.171) notes, businesses continually make decisions that affect "a nation's industrial technology, the pattern of work organisation, location of industry, market structure, resource allocation, and, of course, executive compensation and status" while working, and making decisions with "broad discretion" (ibid. p.171), outside the political arena; within capitalist societies, a

system of diffuse private authority exists alongside the state. In determining a broad range of societal issues, business decisions are political. Strange (1994 p.25) makes a similar point, saying that there are

“corporations or state enterprises that have set up their own hierarchies of authority and chains of command in which decisions are taken that are essentially political more than economic. I do as the company president or the managing director says, not because I shall gain economically, but because he has the authority to command me, a middle manager or a shopfloor worker. Mine is not to reason why – just as if he were the general and I am a private soldier.”

However, it should be noted that the vast majority of business decisions, while political, have little noticeable impact; the decisions of a small business will have little direct impact on the broader constitution of society and national politics. Instead, decisions that are widely applied – which can occur either in the context of high-level decisions in a major corporate hierarchy or through the widespread adoption of a decision by many actors – can fundamentally change society and how it operates. Put another way, while all businesses make political decisions, size does matter and the largest businesses will tend to make the most influential political decisions with the largest ramifications (Beder, 2010 p.497).

This political power of corporations can be seen in the decision to add lead to gasoline. In the 1920s, a coalition of General Motors, DuPont Chemicals and Standard Oil of New Jersey (now ExxonMobil) decided that, in order to stop the accidental auto-ignition of gasoline that had been damaging engines (Rosner and Markowitz, 1985 p.354), gasoline should be blended with lead. This decision became standard practice across the world, and is still practiced in some developing countries. The addition of lead to gasoline, while increasing engine durability, did however lead to the majority of the world’s population being regularly, consistently and knowingly²⁴ exposed to a “neurotoxin that causes renal damage, neurological dysfunction, anaemia, and, at high doses, death” (Lovei, 1998 p.1). Recent research has even suggested that the exposure to lead in preschool children that resulted

²⁴ Knowledge of lead toxicity had been strongly established in the 1920s. However, chronic lead poisoning by lead particulate matter had not been established. For an account of the (somewhat corporate) politics surrounding the science of lead intoxication in the 1920s see Lewis (1985).

from lead's use in gasoline was responsible for high crime and murder rates (due to lead's impairment of neurological function) within the Western world during the post-war period and that the end of its use resulted in a significant decline in the crime and murder rates (Nevin, 2007).

In this example, decisions made by a small number of corporations fundamentally affected the running of society, but, according to dominant understandings of politics, would have only be considered political when the action resulted in the issue manifesting itself within the political system. As such, the understanding of politics contained within the interest group literature (and in the work of Fuchs) fails to consider important issues that determine "who gets what, when and how" (Lasswell, 1968). Moreover, this understanding of politics is premised upon a (liberal) idea of the proper and legitimate role of the state and market, with the view that the decisions of the state are political and the decisions within the market are not.

This market/state division has important consequences for democratic systems. Most obviously, it means that there is no direct political accountability for a vast array of societal choices, as these decisions are rendered non-political (Néron, 2010 p.343). Moreover, political accountability is distorted because, with decisions made by private actors being non-accountable, accountability for negative outcomes often falls to politicians, sometimes rationalised on the grounds of their failure to act or affect change. In particular, politicians are often held accountable for local economic conditions by the electorate; the health of the economy is one of the main factors by which the success of a politician is judged by his constituents (Przeworski and Wallerstein, 1988 p.12).

This distorted accountability, particularly regarding economic conditions, further empowers business. Since politicians in a market society cannot force or command business to employ people, they must induce action through incentive and attraction; they must create a "business-friendly" environment. Politicians are compelled to act in such a manner as, due to the distorted accountability system, politicians could face removal from office if the economic conditions worsen. Equally, politicians also have a disincentive from acting in ways perceived to actively harm business and, by extension, growth and employment (Lindblom, 1982 p.329).

One of the methods of inducing corporations to provide good economic conditions is

to talk directly and openly to the corporations; including them in policy discussions as relevant “stakeholders” who can help the politicians achieve either specific (i.e. bringing a new technology to market) or general goals (improving economic conditions). Unlike other such stakeholders, corporations, through their hierarchical management systems, are able to speak directly and precisely and so are able to negotiate with politicians in order to secure the best deal for themselves. Hence, for example, United Airlines was able to extract massive concessions out of a series of different cities by playing the cities off each other when negotiating the location of a new airline hub (Kantor and Savitch, 1993 pp.230-231).

A particular form of this structural power mechanism is highlighted in the political economy literature that focuses upon trade politics (e.g. Schiller, 1999, McGillivray, 2004, Grossman and Helpman, 2005) and distributive politics more broadly (e.g. Rundquist and Carsey, 2002, Lowry and Potoski, 2004, Carroll and Kim, 2010). This literature highlights how a local politician will seek to ensure the financial well-being of their constituency and, in this respect, will pay attention to corporations who are major employers in their constituency. As McGillivray (2004 p.15) notes “an industry that is concentrated in [a] electoral district is probably such an important employer in that district that its representative cannot afford to ignore the industry’s demands”. Thus, the structural power of corporations can work more effectively on a politician with a smaller constituency, such as a Representative, than a nationwide constituency, such as the President.

Increasingly since the 1980s neoliberal revolution, as both the governance and regulatory state literatures note, corporate private authority has been extended by states into areas traditionally seen to be the domain of the state (Wilkinson, 2005 pp.2-5). As Drache (2001 p.6) points out "Governments everywhere continue to privatize, deregulate, and out-source the business of government to business." One of the most pertinent ways for this thesis in which states have increased private authority is through public-private partnerships (PPP), and the active recruitment of corporate actors for involvement in governing – although the extent to which corporations have power in these situations is largely dependent upon the legal form of the particular PPP, which tends to vary in different national contexts (Mörth, 2009, Greve, 2010 p.568).

One aspect that enhances the power of corporations to realise their interests through

negotiation with states and politicians in establishing new facilities or during the creation of PPPs is the endurance of their management structures. While politicians may come and go (or be shifted from areas of interest to a corporation), and whose decisions are accountable to the electorate, individual business managers are subject only to company stockholders and can endure well beyond the tenure of most politicians. Because of such endurance, corporations can take a longer-term view of their political interests (particularly if the political views are held by major company stockholders), waiting or compromising in a hostile environment and pushing forward in a supportive one; because of their longer lasting power, corporations can commit to short-term promises with the view to act against these promises (or simply forget them) when circumstances change – to endlessly defer substantive societal change by engaging in a form of “creative compliance” (Moran, 2002 p.400). For instance, executives within the tobacco industry repeatedly made claims that their companies would “stop business tomorrow” if they “had any thought or knowledge that in any way we were selling a product harmful to consumers” while attempting to suppress scientific knowledge that proved just that (Proctor, 2012 p.331). Finally, one of the most important elements of corporate visible power is their financial resources, which are a by-product of corporate public function within the economic sphere. These financial resources have two consequences for politics. First, they free corporations from the restraints most interest groups face in that a corporation does not need to alter its position to court funding; corporations can act as entirely self-interested political actors. Second, having these financial sources of support enables the use of a variety of lobbying tactics within the political arena; as Lowery et al. (2005 pp.47-49) note, corporations

“have far higher profit margins than others and certainly more resources than citizens’ organizations. These profits represent slack resources that can support organized interests. Instead of merely joining a single professional association, for example, a wealthier firm may join several as well as deciding to invest in direct lobbying on its own behalf. Indeed, this explanation is so plausible that the mere fact of having financial resources constitutes a smoking gun for many popular works on bias in interest representation.”

Financial resources, then, both support and intersect with many other forms of corporate power.

Hidden Power

The hidden power of corporations refers to those actions taken behind-the-scenes and the means of keeping these actions behind-the-scenes. It differs, then, from manifestations of visible power that happen in closed spaces; these mechanisms work in a way that requires secrecy, or is necessarily covert rather than being incidentally so. Corporate hidden power also includes “non-issues” and the methods by which corporations have tried to organise issues both in and out of politics, which have been identified in the US interest group literature and were utilised by the tobacco industry.

One main aspect of hidden corporate power is the, intentionally-cultivated or not, interpersonal relations between corporate executives and members of the political establishment (Carroll and Carson, 2003 pp.30-32). C. Wright Mills (1956 p.12) conceived of the interpersonal relations established through attendance of elite universities, through membership of certain clubs, and through other such exclusive institutional settings where those in elite positions, or heading for elite positions have the opportunity to meet each other, as creating a power elite. For example, George W. Bush, as the grandson of a Senator; the son of a former President, Vice-President and CIA head; and Yale and Harvard alumnus would likely have many contacts within the political and business world due to his background (Schneider, 1968 pp.17-18). As Domhoff (2005) argues:

“Members of the upper class live in exclusive suburban neighborhoods, expensive downtown co-ops, and large country estates...They attend a system of private schools that extends from pre-school to the university level; the best known of these schools are the “day” and “boarding” prep schools that take the place of public high schools in the education of most upper-class teenagers. Adult members of the upper class socialize in expensive country clubs, downtown luncheon clubs, hunting clubs, and garden clubs. These various social institutions are important in creating “social cohesion” and a sense of in-group ‘we-ness.’”

However, the connections do not need to be so comprehensive so as to constitute a power elite. Connections can be forged as a result of power (and thus enhance power), instead of prior to power, as former Enron CEO Kenneth Lay’s twenty year

courtship of the Bush family attests (Bryce, 2004 ch.12).

In a similar manner, the tobacco industry followed a policy of actively attempting to create good connections between it and media commentators. As one internal document reveals, when urging European arms of Phillip Morris to create a network of friendly journalists, “one successful approach we have employed is our work with the National Journalism Center in Washington, D.C. NJC conducts on-going intern programs for college students and recent college graduates and also assists their graduates to obtain jobs in major media organizations” (Hines, 1994). The payoff for creating such a network was “favorable articles/commentaries in major publications such as the *Wall Street Journal*, *National Review* that reach millions of the public through the numerous syndicated columnists that are in our network” who “can be accessed for numerous issues” (ibid.).

Moreover, interpersonal relations can be developed through the “revolving door”; a term used to refer to the continual movement of personnel between policymaking jobs and lobbying or business jobs, and vice versa (Johnson, 1983 p.95). While the influence of the revolving door occurs covertly, Blaines i Vidal, Draca and Fons-Rosen (2010), utilising data from the Centre for Responsive Politics, found that revolving-door lobbyists’ revenue is affected by the status of their former bosses; most notably in the case of lobbyists who have professional connections with a US Senator suffering a 21 percent drop in revenue once the Senator leaves office. While these findings do not necessarily mean that the connected lobbyist is more able to influence their old employers, it does suggest that actors within the political arena perceive these lobbyists to be more influential. The revolving door is also widely used, with 53% of former members of the 111th Congress (2009-2011) working in lobbying positions less than two years after losing office (Center for Responsive Politics, 2012).

Businesses benefit from the revolving door not only because they employ/formerly employed those who have passed through the revolving door, but also because they have the necessary financial resources to hire lobbying firms with issue-relevant revolving door personnel. While this benefit also extends to other interest groups that have sufficient resources, the majority of these interest groups need to both rally support and ensure the happiness of current supporters and thus, when using their financial resources in such a manner, must adopt positions that can attract and

retain support within the constituencies of their particular issue area (Holyoke, 2011 p.29). Corporations, in contrast, can access revolving door personnel to push only their narrow interests.

Another of the main hidden powers of corporations is their capacity to disseminate their message through a variety of sources, often adding a glaze of impartiality to their message; as Lindblom (1977) says “corporations employ all possible methods, overt and covert. The source of their communications is usually obscure...only a small part of [their message] comes explicitly from a business source”. This message dissemination has occurred primarily through the media, who have been both willing participants in corporate message dissemination, and (as the tobacco example on the previous page shows) co-opted into dissemination in several ways (Gill, 2000 p.136).

Willing participation comes from the media increasingly being owned by a small group of corporations. There are currently five major companies – Comcast (which owns NBC and Universal, among others), Disney (ABC, ESPN, Pixar), TimeWarner (CNN, HBO, Time), News Corp (Fox News, 20th Century, Wall Street Journal), and National Amusements (Viacom and CBS) – who own the vast majority of television channels, print media outlets and film studios (Bettig and Hall, 2012 p.3). The US media, then, largely consists of a small group of corporations, and so media communications can thus be understood as primarily corporate communications in and of themselves (Hasen, 1998, Herman and Chomsky, 1988 pp.6-9). This ownership, while not guaranteeing political conformity, – see the difference between CNN and Fox News – does limit the extent of political opinions that are, or are ever likely to be, expressed. Simply put, acting in their own self-interest, corporations will not campaign for regulations that could damage their interests. Individual reporters may do so for a while, but are unlikely to have good long-term employment prospects. The media, then, is generally pro-corporate because it is owned by corporations. From this point, however, it cannot be inferred that all corporations will get good coverage – many individual companies have faced very negative media coverage over defects in their products, for instance (Blasco et al., 2012) – but that the general interest of a media company is not to challenge corporate interests as a whole.

Co-option of the media by other non-media corporations occurs at two levels – the

managerial level and the individual level. At the managerial level, business executives within media companies must maintain profitability. Since media companies rely on advertising, primarily from large businesses, they must ensure that the businesses that advertise with them continue to do so, which gives these corporations an avenue for pressure. For instance, in 1969, when the New York Times announced it would no longer publish cigarette ads without a health caution, the American Tobacco Company published a series of full page ads in other newspapers and magazines attacking the move – claiming that “anticigarette theory is a bum rap” (Proctor, 2012 p.375). While they did add the health caution in 1969 “America’s “newspaper of record” continued to print cigarette ads until 1999” even while being “repeatedly urged to refuse tobacco advertising” during the 1970s and 1980s, which the New York Times refused to do because it would set a “dangerous precedent” (ibid. p.385). Paying greater attention to advertiser pressure than the New York Times did in this example could result in either self-censorship, where the media organisation does not put out negative information for fear of losing advertising revenue, or threats that result in negative information not being released.

At the individual level, corporate ownership, reliance on advertising revenue, technological change and external economic pressures have resulted in a news media that has a requirement for increased content, but employs fewer people to create that content. Such a situation has forced journalists and other media workers to reduce the time spent on articles by reducing the investigation and research that goes into an article. Instead, the news industry has moved to engaging in “churnalism” (Freedman, 2009) – the uncritical repetition of pre-packaged media material. As such, in recent years journalism has become to be a form of “creative cannibalization” (Fenton, 2011) with the reproduction of material “gathered overwhelming from public relations and news agency sources” (Freedman, 2009 p.41). Through public relations agencies, then, corporations can feed their views into the churnalism machine for wide dissemination with a glaze of impartiality.

Furthermore, (and another possible source of churnalism) corporations have utilised think-tanks to produce research that promotes certain viewpoints so that the research can be disseminated through the media, thereby bestowing the corporate position with some kind of scientific legitimacy and without any connection to the business backers tainting the reception of the research (Jacques et al., 2008 pp.364-

365). As Smith (2000 p.193) notes “because of their independence, [think-tank analysts called on by the media] are likely more persuasive advocates of probusiness policies than are spokespersons who explicitly represent corporations, trade associations, or peak associations” and, as such, think-tank advocacy is a “critical source of business power”. For instance, the tobacco industry utilised a number of think-tanks to both cast doubt on the science underlying nicotine addiction and to change the agenda about second-hand smoke from the banning of indoor smoking (which could have impacted on sales) to ensuring better ventilation (Hirschhorn and Bialous, 2001, Saloojee and Dagli, 2000).

Additionally, conservative/right-wing think-tanks – the Heritage Foundation, the American Enterprise Institute, the CATO Institute – have worked to provide general ammunition and help for pro-business and pro-corporate positions, while accepting funds in return. The Heritage Foundation, for instance,

“serves as a meeting place for conservatives, with daily lectures, debates and briefings. Corporate representatives meet with government decisionmakers through the Washington Policy Roundtable... A resource bank of scholars and policy experts around the nation has been compiled to provide the media and congressional hearings with conservative commentary” (Peschek, 1987 p.33)

In this respect, the Heritage Foundation was described by Newt Gingrich as “the most far-reaching conservative organisation in the country in the war of ideas” (as quoted in Rich, 2005 p.1). The benefit, then, of funding organisation, such as Heritage, is that they provide ideological ammunition and interpersonal networks. Corporate funding of think-tanks has also accumulated ancillary benefits in that these think-tanks have become viewed as good sources of information and turned into increasingly influential actors in their own right; with think-tanks even being invited to Congressional hearings and other important political venues, alongside having developed their own connections to the media (Smith, 2000 p.172).

With corporate use of think-tanks and influence on the media, there is an overlap between hidden and invisible power. In the short-term, and particularly with media pieces, corporations are attempting to alter the agenda, to re-direct attention and to organise concerns both into, and out of, politics. In the long-term, and particularly with general funding of free market think-tanks, corporations are establishing

legitimizing discourses that empower them. Moreover, this overlap between hidden and invisible power helps demonstrate how these two forms of power can interact. Hidden power can, over-time, create invisible power; the continual altering of the agenda can mould people's perspectives and perception of what is achievable, desirable or acceptable according to the dominant discourse. Equally, invisible power can determine the success of the use of hidden power; agenda manipulations that cut against the dominant discourse cannot rely on common-sense assumptions to ease the passage of the argument.

Similar to the use of think-tanks, but directed to a wider audience, astroturf groups – artificial “grassroots” movements (Kollman, 1998 p.64) – have proved an effective way for corporations to communicate their message through a third party. Astroturfing works by mimicking outside lobbying tactics in order to make it appear that a certain policy has grassroots support/opposition, when in actuality, it is the work of a PR firm. For example, after gaining the consent of the person being written on behalf of, astroturf letter-writing campaigns have utilised different writing styles and different types of paper in order to make the letter appear as if it was personally written and not the equivalent of a signature on a petition – with letters written on behalf of old ladies being written with “little kitty cat stationery” (Lyon and Maxwell, 2004 p.563). In a similar manner the tobacco industry created several astroturf groups, such as the Fair Cigarette Tax Campaign (funded by Phillip Morris), to project the illusion that there was widespread public opposition to “anti-tobacco” measures (Proctor, 2012 p.140). These tactics are not new, and can be traced back to the 1930s, when Carl Byoir created front groups such as the National Consumers' Tax Council, the Emergency Consumers' Tax Council and Property Owners Inc to oppose new legislation that would have taxed chain stores (Miller and Dinan, 2008 pp.20-21).

One final point to consider in this section on hidden power is corporate confidentiality. One of the major reasons that corporations are able to use hidden power tactics such as astroturf groups and think-tanks is the right to corporate confidentiality and their capacity to operate behind closed doors (Nadel, 1975 p.15). These two issues leave information about the workings of these major organisations in the dark, impeding analysis of corporate activities and comprehension of the scope of these activities. So, when the tobacco industry was forced to provide its private documents

by court order the many machinations and manipulations of the industry were revealed that previously had been covered by the corporation's right to confidentiality. With the exception of the tobacco industry, corporate privacy is also somewhat asymmetric in the policy formulation and implementation processes as parts of the government (and interest group communication with government) can be subject to requests under the Freedom of Information Act, which corporations can slip out of due to a clause in the act that protects trade secrets and financial information (Department of Justice, 2009). This asymmetry means there is a disparity in the power to control information, and thus to be held to account, between government and corporations.

Invisible Power

“Ultimately...the control of the economic system by the market is of overwhelming consequence to the whole organisation of society; it means no less than the running of society as an adjunct to the market. Instead of economy being embedded in social relations, social relations are embedded in the economic system”

Karl Polanyi (2001 [1944] p.60)

Underlying the mechanisms of influence mentioned above is a discourse of business legitimacy that facilitates business visible and hidden power. As Dahl (still then in his pluralist phase) noted in New Haven

“the goals of businessmen are legitimised by a system of beliefs widely shared throughout the community. Among other things, this system of beliefs gives legitimacy to business itself as an essential institution in American Society” (Dahl, 1961 p.76).

This system of beliefs supports the ability of corporations to make productive decisions without democratic oversight, to be viewed as a legal person and to make political communications. It constitutes, as Lindblom (1977) termed it, the “privileged position of business” in society and serves to protect the rights afforded to business.

However, in recent years greater invisible power has accrued to corporations beyond their privileged position. As Moran (2009 pp.149-150) notes

“in the last couple of decades, we have seen a determined attempt to recreate a Gramscian hegemony: to establish as an instinctively accepted fact of life

that the market is the naturally best way to allocate resources and that empowerment and enrichment of a corporate elite inside the biggest enterprises is simply a necessity if the market order is to prosper.”

Commonly termed the “neoliberal revolution” (Duménil and Lévy, 2004), this determined attempt has been very successful in establishing neoliberal values as dominant discursive currents in the US. While the term “neoliberalism” is often pejoratively used without clear definition (Boas and Gans-Morse, 2009), it can be seen as a political project motivated by a broad body of economic thought – promoted by the likes of Friedrich Hayek, Milton Friedman and Ludwig von Mises – that holds that a laissez-faire market is desirable as it is the most effective way to organise society. More specifically, neoliberalism is associated with policies of deregulation, privatisation, lower taxes, reducing the power of unions and a reduction in the size of the state.²⁵ Yet neoliberalism is more than just a political ideology of the economic. Neoliberalism is entwined with many moral and political values as well. As Harvey (2005 p.5) argues,

“For any way of thought to become dominant, a conceptual apparatus has to be advanced that appeals to our intuitions and instincts, to our values and our desires, as well as to the possibilities inherent in the social world we inhabit. If successful, this conceptual apparatus becomes so embedded in common sense as to be taken for granted and not open to question. The founding figures of neoliberal thought took political ideals of human dignity and individual freedom as fundamental, as “the central values of civilisation”. In so doing they chose wisely, for these are indeed compelling and seductive ideals. These values, they held, were threatened not only by fascism, dictatorships, and communism, but by all forms of state intervention and substituted collective judgements for those of individuals free to choose.”

So, neoliberalism is not only a positive political theory but also a normative one that has tied itself, successfully, to other major discursive currents in US society. In championing the market, the reduction of the state and deregulation in such a manner, neoliberalism has worked well to enhance the private authority of

²⁵ In practice, neoliberalism has, and individuals associated with the neoliberal political project have, not worked to assiduously stick to neoliberal principles. Hence, Gamble (1994) characterises Thatcherism as a combination of “the free market and the strong state”.

corporations by withdrawing government control from the market.

In addition to being based upon seductive ideas, neoliberalism has, and proponents of it have, pushed the view that neoliberal economic ideas are scientific, objective and empirically-grounded. Yet, as Chang (2010 p.32) points out, this viewpoint is an “ideological cloak” whereby they “pretend that their politics is not really political, but rather is an objective economic truth, while other people’s politics is political. However, they are as politically motivated as their opponents.” Equally, Aune (2002 p.168) argues that “the ideological rhetoric of “the market” refuses to recognise itself as rhetoric”. The tactic of neoliberals presenting their views as objective places opponents in a double bind; either they can reject neoliberal assumptions and be derided as not understanding reality, or they can seek to justify their policies using the neoliberal framework, in which case they have ceded the ground of the debate and limited themselves to variations on a neoliberal theme. It is in this manner that the use of this ideological cloak has been very important in advancing neoliberalism and it has helped establish the idea that there is no alternative to the neoliberal project; it is simply proven to work and benefit society.

As we saw above, this narrative was advanced by think-tanks and the media. It was also taken up by the political parties and increasingly became the grounds on which politics was fought. Smith (2007 p.15) notes that starting in the 1970s “Republicans repeatedly highlighted [their economic plans] on the expectation that a jobs-and-growth message would resonate with the electorate. Furthermore...Democrats did not cede the economic terrain but instead paralleled Republicans in shifting the discussion of jobs, incomes, and growth to the forefront of their rhetoric...In the day-to-day course of governing, American politics became more, not less, oriented around the economy and the issues that define it”. This orientation around economic concerns has come at the expense of political concerns; as Radice (1999 p.21) notes “the state has become increasingly structured around an agenda that intrinsically excludes or subordinates [non-economic] concerns”.²⁶

The ascendancy of neoliberal discourse, and the structuring of the state around economic concerns, has benefited corporations in several ways. Neoliberalism

²⁶ Writing in 1972 (p.7), Galbraith presciently wrote that “I am concerned to suggest the general lines of emancipation. Otherwise we will allow economic goals to have an undue monopoly of our lives and at the expense of other and more valuable concerns.”

helped establish ideas of the free market, of efficiency, of growth, of consumer choice and of economic democracy that corporations could use or naturally benefitted from (Fuchs, 2005 p.29). So, for instance, the free market, which is the idea that economic actors should be free to pursue their own self-interest as such actions will ultimately improve society, benefits corporations as it works as an automatic shield against new government regulation: as interference in corporate affairs is viewed to harm societal welfare.

In addition to the free market working as an automatic shield, the idea of the free market can also be invoked by corporations; the discourse can be used by actors for generally anti-regulatory purposes. However, while it generally operates in this anti-regulatory manner, the free market can be deployed flexibly. This flexibility is due to the free market being ephemeral; lacking any definition as to where it stops and when it has been achieved, it is instead something that is defined in such a way so as society is always working towards it. When a market appears free it is because government restrictions, such as on the sale of people, political votes or university places, are not noticed because the regulations are agreed with and so-well established as to appear natural. As such, the free market is in the eye of the beholder (Chang, 2010 p.25), which can be seen in arguments over the 1819 Cotton Factories Regulation Act discussed above and in the fact that intellectual property rights – historically considered as a restriction of free trade (Sell, 2003 p.6) – have become a well-established component of the neoliberal free market.

Underlying and supporting the idea of the free market is the idea of market efficiency. As Hayek (1978 pp.63-64) says the free market ensures “a more efficient allocation of societal resources than any design could achieve”: put simply, the market is freer, and working more efficiently (for the benefit of all), when the government regulates less. The argument that markets do things more “efficiently” enshrines a distorted concept of efficiency as the main ordering factor for economic and political decisions. In fact, in neoliberalism efficiency, understood as “resources being used where they are valued most highly” (Aune, 2002 p.21), is favoured over other normative principles that have provided the foundations for many democratic debates. Equality, morality, justice, dignity, etc can all provide important considerations that conflict with the goal of efficiency. For instance, it may be the most “efficient” to factory farm animals but it is not necessarily something that society would desire. However, if

many societal decisions such as these are left to the market (i.e. are not regulated on for fear of harming efficiency), these principles are insulated from political (democratic) control.

Like the free market, efficiency is an equally flexible (or empty) term that provides intellectual fodder for neoliberalism. While neoliberalism valorises efficiency, efficiency is never a goal in and of itself; instead it is the feature of a process of achieving a goal. For instance, if a state aims to improve the efficiency of health care delivery the end goal – the purpose – is to improve health care, perhaps at cheaper cost or at better value for already spent money; the purpose is not efficiency in and of itself, but efficiency for something. To say the free market is the most efficient allocation of societal resources is to overlook debates as to the purpose of society – what goals are resources being used for? Thus, the neoliberal use of “efficiency” is empty of real content because efficiency is never an actual end goal in itself, but the characteristic of a system achieving its goals (Colander, 2004). The focus on efficiency, then, plays an important part in making neoliberalism appear as a non-ideological position as the debate over the goals that are being achieved efficiently is obscured.

Related to neoliberalism and its constituent ideas is the idea of a gross domestic product (GDP) growth economy (Daly, 2007 p.246). Ensuring GDP growth became a feature of political debate in the post-war years (Dickinson, 2012) as it was seen as synonymous with creating new jobs and ensuring the continued well-being of the country. Thus it was already a constant point of political debate prior to neoliberalism, but, under neoliberalism, became even more significant still. Yet major problems come with the idea of a GDP growth economy and ordering politics around the maximisation of GDP. GDP is a rather limited aggregate measure of the value of the formal exchange of goods and services within an economy – it measures how much money changes hands. As such, it does not include many aspects that are important to societal well-being. This point was well known from its inception with the inventor of GDP – Simon Kuznets – warning, during his announcement of its invention to the Senate, not to confuse GDP growth with progress as “the welfare of a nation can...scarcely be inferred from a measure of national income” (Faris, 2009).

GDP departs from societal welfare on a number of key points, such as in not accounting for crime, recycling, second-hand sales, changes in quality, increases in

leisure time, environmental damage, the destruction or consumption of resources, voluntary work and many other issues that affect the happiness, material wealth and overall welfare of society (Jackson, 2009 ch. 8). Moreover, it does account for – and thus sees growth in these areas as, in the aggregate, positive – health care costs, long daily commutes, the replacement of easily-broken goods, the destruction of renewable resources and many other things negatively associated with societal welfare. Put more eloquently, by Robert Kennedy in 1968, GDP “counts napalm and the cost of a nuclear warhead, and armored cars for police who fight riots in our streets...it does not include the beauty of our poetry or the strength of our marriages; the intelligence of our public debate or the integrity of our public officials” (Faris, 2009). In fact, as it is a measure of throughput, an increase in GDP can potentially be accompanied by declining “wealth” when capital is drawn down while producing limited-life goods, as non-monetary, or non-monetisable, resources are expended in the production of new temporary goods.

In this manner, the importance attached to GDP growth by neoliberalism works to limit political debate because it establishes other values as in conflict with the well-being of society (understood through GDP growth) – i.e. environmental (health, safety, etc) regulations are viewed through the lens of restricting growth and therefore harming society, rather than being judged on their actual contribution to societal well-being (Daly, 2007 p.10). Because GDP only measures a simulacrum of the welfare of society that mistakes throughput as “wealth creation”, and since corporations are geared towards throughput and to the use of natural capital, corporations are empowered by this political focus on GDP growth. A GDP-growth understanding of the corporate contribution to society only illuminates the positive – the production of materials for everyday life and the employment of millions – leaving the negative – resource depletion, pollution and decreased biodiversity – in the shadows (Wanna, 1991). Hence, corporations are enabled to paint their actions as for the good of society, even when their actions have negative consequences. For instance, the tobacco industry sought to undermine arguments about the negative health consequences of smoking by making a situation whereby “to question cigarettes was to undermine the economic well-being of the nation” (Proctor, 2012 p.328); effectively putting the cart before the horse by arguing that societal well-being is preserved because the economy is preserved, rather than arguing directly

about societal well-being.

One final element of neoliberalism, which can be seen in the Harvey quote above, is its use of seductive values. These values underpin one of the strongest anti-regulatory arguments deployed by corporations, which is that consumers and the market should be free to choose and, subsequently through the many purchasing decisions of consumers, that the market is an accurate reflection of consumer choice. Hence, as people “vote” with their money, the market works akin to a democracy. As Milton Friedman (1962 p.15) argued, the market “is, in political terms, a system of proportional representation. Each man can vote, as it were, for the color of the tie he wants and get it.” In Friedman’s view, then, demand conditions supply.

Working in the political arena, the extension of Friedman’s view is that government regulations are a restriction on (economic) democracy and an individual’s right to choose (Marcuse, 1964 p.4). The choice argument, then, can work as an anti-regulatory shield in order to preserve corporate autonomy in the economic realm. The tobacco industry deployed this argument with such success that the ACLU (with the help of hundreds of thousands of dollars of donations from the tobacco industry) sought to protect the freedom of smokers to smoke in the early 1990s, but not the freedom of non-smokers not to inhale second-hand smoke (Proctor, 2012 p.390).

Moreover, the choice argument works to absolve corporations of responsibility for their production decisions since it creates the idea of the corporation as a non-actor; as an unconscious mechanism for the satisfaction of consumer preferences and, as such, beholden to their interests rather than having interests of its own (Galbraith, 1972 pp.213-220). However, there are four main reasons that suggest this view of the relationship between a corporation and the market is flawed and that this characterisation simply serves ideological ends.²⁷ The first reason is that, at an aggregate level, the market mechanism is a crude communication tool incapable of delivering detailed preference information from buyer to seller (Lindblom, 2001 p.67). For example, a single Ford Focus has numerous attributes – colour, styling, performance, size – and a consumer, liking one or a combination of these factors, could purchase it for any of these reasons. However, the very act of purchasing only gives the seller the information that the consumer prefers such a particular package

²⁷ See also Galbraith (1972) for a discussion of the idea of consumer sovereignty and the necessity of economic planning within advanced capitalist systems.

of attributes put forward, but not, crucially, information about which attributes. This point has two consequences. First, sellers have only a limited capacity to make substantive changes to complex products in response to the market as the information about desired changes is not communicated. Second, if the capacity of buyers to influence the market is reduced, sellers must have a greater role in market decisions and cannot be assumed to be simply reacting to consumer demand.

This more active relationship between corporations and customers is further enhanced through advertising, and the continual stream of positive information that corporations put out about themselves and their products. Advertising “appears to be clear evidence that market elites want to manipulate mass (sic.) rather than simply respond to the preferences signalled by purchases” (Lindblom, 2001 p.70). Most importantly, communication through advertising is not matched by even vaguely similar levels of communication from citizen groups or by groups with opposing views; the communication is unilateral, constant and one-sided (Lindblom, 2001 p.212). It is because of this unilateralism that Edward Bernays, one of the pioneers of the PR industry, (Bernays, 2005 [1928] p.9), wrote “the conscious and intelligent manipulation of the organised habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country.”

The second reason to doubt the account of the corporation’s relationship to the market and the consumer is that corporations can make a whole host of decisions that are not noticeable to the end consumer. As Lindblom (2001 p.66) notes

“In market systems, buyers control only the most conspicuous features of what market elites offer. You and I choose the shape and softness we desire in a mattress. But we have only weak or no market control at all, aside from an occasional boycott, over elite decisions on many of the attributes of the mattress not visible to us—its flammability, for example.”

Equally, issues to do with the production process or employee welfare are rarely, if ever, subject to control by the consumer.

Moreover, to a large extent, consumers will demand that which they have already

had and what is considered “normal”. That is to say that, in a historical sense²⁸, supply also conditions demand since people want what has previously been supplied to them. Considering that, as was seen above, consumers only control the most conspicuous aspects of products, sellers (particularly corporations as they are major sellers and have, for the most part, existed for a significant amount of time) have the power to gradually shift the market and to alter demand over time. For instance, since the 1940s the agricultural system has shifted towards factory farming of chickens, which has both significantly lowered the welfare of the animals (a hidden attribute of the end product that is not naturally amenable to market pressures) and lowered the cost of chicken meat (Nierenberg and Mastny, 2005 p.15). Supply of low-cost chicken meat has normalised low-cost, poor-welfare meat to the extent that consumers expect chicken meat to cost little, and are unwilling to pay more (i.e. to return to a historically normal price) for higher-welfare meat (Van Loo et al., 2011). Over a much-longer term, with many generations being raised on factory farmed meat, there is also the possibility of factory farming coming to be seen as inevitable and necessary.

Also, to some extent, consumers cannot demand that which has never been offered, it is only once a product is offered that demand begins to grow. If this point is accepted, then it is possible that demand for a certain product (say pizza) could exist because other preferred options (fish and chips, perhaps) are not available. To suggest, then, that the market offers consumers power and control, and that the market is therefore a reflection of consumer choice, is incorrect as market choice is bounded by conditions of supply which, to a degree, are controlled by people and organisations that make production decisions.

The third reason is that choices that cannot be provided by the market, because they concern resources not privately owned, are unavailable in a market system and so cannot be considered as part of “economic democracy”. Consumers are not offered the choice of having clean air or having non-polluted natural resources, they are only offered products that can be individually owned. The appeal to leave choices to be made through the market, then, would tend towards seeing private, individual goods over collective goods, thereby cementing the tragedy of the commons in “acceptable”

²⁸ One of the appealing aspects of Friedman’s view is that it applies well in a simple static model where preferences can be taken as a given. However, in a more dynamic, even intergenerational, model the influence of supply on demand becomes more apparent.

political actions. Moreover, as choices are left to the market, and supply slowly conditions demand towards certain choices, it can often be difficult to legislate to reverse these choices as the choices have become normalised over time. In this respect, the idea of economic democracy can be seen to be displacing political democracy.

The final reason is that, even if it is held that consumer preferences are endogenously created, corporations can still influence the market decisions consumers make by exploiting limited consumer knowledge of how to satisfy certain hidden or intangible preferences – such as build quality, safety, healthiness or brand prestige. How to realise these consumer preferences is not at all conspicuous and so can be subject to diversion through advertising and the provision of misleading information. For instance, the tobacco industry spent a great deal of time and money designing packages that “communicate the impression of lower tar or milder cigarettes, while preserving perceived taste and “satisfaction”” (Wakefield et al., 2002) so that women and younger smokers would not be turned off of cigarettes. Combined, these four reasons suggest that the neoliberal view of consumer choice and market democracy is a corporate-empowering fiction.

At the same time, the influence of neoliberal views, particularly of consumer democracy, has had created an ancillary benefit whereby corporations are viewed as experts in market affairs. As Fuchs (2005 p.22) notes

“the increasing emphasis on efficiency, competitiveness, and growth rather than equity, full employment, and the availability and accessibility of public services, for instance, in the last three decades of the 20th century, has turned business into the politico-economic expert”

Thus corporations, and their representatives, are seen as the primary source of information as to the market situation, consumer desires and the future direction of the market. Such a situation enhances both access to policy-making spaces (since politicians wish to have expert input) and the legitimacy of corporate utterances regarding economic issues.

In addition to neoliberalism and its various facets, corporations are empowered by a “sound science” discourse. Like neoliberalism, sound science utilises an ideological cloak of objectivity. It is a term that has grown increasingly popular in political debate

and appears relatively uncontroversial at first sight (Mooney, 2004); as McGarity (2003 p.898) notes

“talk of science raises the expectation that decisions will be determined by objective criteria, solid empirical data and rational analysis. Nearly everyone believes that society is better off when governmental interventions into private market arrangements to protect health, safety and the environment are driven by sound science, rather than unfounded emotions”.

Yet, the term sound science is fundamentally paradoxical since it suggests deferment to others, or to a body of knowledge, but necessarily involves a judgement into what counts as “sound”; it simultaneously implies both a value judgement and a lack of value judgements. It also implies that there is always an established scientific consensus to inform policy, whereas “uncertainty in science, which is the norm not the exception, does not mean the science is flawed, nor do disagreements among scientists mean that one of the parties is wrong or is using “junk science” (Michaels, 2005 p.S5).

Use of this paradoxical phrase, however, has allowed both corporations and government to utilise policy-driven science (rather than having science-driven policy) to legitimate their positions and thus empowered them to push forward their agendas. Working in this manner, the tobacco industry pushed the sound science discourse as a cover – claiming there was no scientific consensus – while seeking to combat studies that linked smoking to cancer. For instance, Phillip Morris and other tobacco corporations engaged in a strategy, nicknamed the White Coat project, of recruiting scientists to do research that could later be called on in court. These pro-tobacco scientists then “disseminated their results through industry-sponsored, non-peer-reviewed publications that simply summarized industry-sponsored and industry-organized conferences” (Friedman et al., 2005 p.S17-S18).

In fact, the tobacco industry, in many and various hidden power moves, was largely responsible for establishing the “sound science” discourse. In 1993, PR firm APCO Associates, with a \$320,000 half year budget from Phillip Morris, founded The Advancement for Sound Science Coalition (Ong and Glantz, 2001 p.1749). This coalition took on a number of issues, such as foods, plastics and chemicals, so as to disguise its anti-second-hand-smoke agenda (and thus avoid being denied access

due to people viewing it as heavily partisan) and to broaden its base of support. This coalition sought to create doubt about second hand smoke's health risks, to manufacture an alternative "scientific" discourse and to require ever higher levels of evidence from their opponents (ibid.).

Likewise, a number of industries – with ExxonMobil one of the worst offenders – have sought to contest the science underlying climate change and funded various astroturf groups, think-tanks (most notably the Competitive Enterprise Institute), academics and conferences that have sought to paint climate change as "just a theory" (Greenpeace, 2010). Like The Advancement for Sound Science coalition, the Science and Public Policy Institute has sought to advance an alternative scientific discourse and discredit other views as being produced by people motivated by concerns other than science. The mission of this institute states that it

"support[s] the advancement of sensible public policies for energy and the environment rooted in rational science and economics. Only through science and factual information, separating reality from rhetoric, can legislators develop beneficial policies without unintended consequences that might threaten the life, liberty, and prosperity of the citizenry" (Science and Public Policy Institute, 2012).

Sound science, then, works as an example of the merging of hidden and invisible power when ideas are being deployed. Over a number of years, and through the use of think-tanks and the media, tobacco corporations seeking to shape the agenda in the short term have played a major role in creating a discourse that manipulates perceptions in the long term. Yet, like with neoliberal economic discourse, "sound science" does not stand separate from other societal values but has been entwined in them. In this case, sound science is linked with ideas of technology, progress and rationality, as we can see from the Science and Public Policy Institute's mission. In building on established discourses, the discourses that empower corporations have managed to avoid significant scrutiny and appear benign, unobjectable and non-ideological. Avoiding scrutiny has also allowed easier replication of this discourse beyond its original sources; the ideas have become powerful memes (Ratkiewicz et al., 2011) within society and have, consequently, altered the public perception of good and bad political viewpoints.

Both the sound science and the neoliberal economic discourses are extremely powerful in disciplining thought as each seeks to portray itself as objective²⁹, impartial and non-political. These narratives stifle, instead of enhance, debate by providing simple answers to complex, value-laden questions. Their domination occurs to the extent that the World Social Forum has to make the basic point (which is its slogan) that “Another World Is Possible”. Likewise, they are doctrines that, while hiding their inherent ideological values, attempt to lay the groundwork for how issues are evaluated and judged – does a policy make “economic sense”? Does it give consumers freedom? Is the policy based on “sound science”? A failure to adhere to these values allows opposition actors to be dismissed as thinking in a manner detached from reality; the discourses “serve to coordinate ideas and goals with those exacted by the prevailing system, to enclose them in the system, and to repel those which are irreconcilable with the system” (Marcuse, 1964 pp.13-14).

While these discourses, particularly the economic discourses, cannot solely be traced to the actions of corporations, corporations are very much empowered by them, in both positive and negative ways. In a positive way, the neoliberal economic discourse makes corporations appear as societally-beneficial organisations who provide consumers freedom and choice in a form of economic democracy, and the sound science discourse promotes the idea of corporations as technologically-cutting-edge, as rational and objective, and the idea of their employees as impartial experts. In a negative way, the neoliberal economic discourse can work as a shield against regulation (in the form of regulations being portrayed as “anti-growth” or against “consumer freedom), and the sound science discourse can work to undermine genuine scientific consensus within the public sphere through attacking the established evidence base as unsound.

Applying the Framework – From Policy Making to Policy Evolution

Inquiries from mainstream interest group theorists have tended to focus on policy making – that is, the formulation of policy (Sidney, 2007 p.79). Such an approach would be inappropriate for applying the framework of power outlined above as decisions outside of the policy arena, non-decisions and unrealised conflict would all

²⁹ Indeed, Ayn Rand (1957), at the harder end of such economic ideas, called her philosophy “objectivism”.

be excluded from the analysis and only a small part of power would be considered. As such, applying the above framework requires exploring policy evolution – the history of the policy, the historical outcomes of the policy, actions within the political arena, other (perhaps opposed) actors, other potential policies, actions within the market, the implementation of the policy and the realised (or potential) outcomes of a policy. Such a body of evidence is necessary because many of the mechanisms of influence work over the long term, rather than the short term, and work prior to, after and outside of political-arena decision making.

On a more fine-grained level of analysis, throughout policy evolution the mechanisms of influence identified above (and shown in figure 3-2) can be investigated to see if they are being utilised so as to see if power is operating in a significant manner. Thus, exploring the role of corporate visible power in a policy area entails investigating the role of private authority in the form of market decisions, the direct representation of interests by local politicians, direct negotiations with the government (such as in the form of public-private partnerships) and the use of financial resources. Hidden power requires exploring interpersonal relationships (particularly in the form of the revolving door), procedural bias, material put out by think-tanks and the media, the work of astroturf groups and the policies that were not adopted. Finally, invisible power is investigated through examining the discourses (such as neoliberalism and sound science) used by corporations and various other political actors, how important these discourses were, how these discourses limit what is seen as legitimate, weaknesses in the discursive account, and the non-discussion of the “common sense” assumptions or values that these discourses rely on.

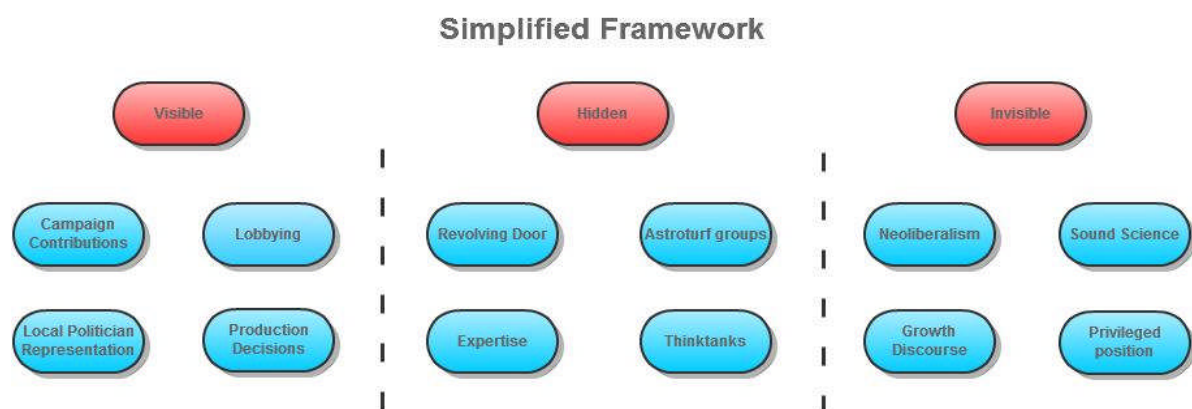


Figure 3-2: Simplified forms of power framework for the exploration of corporate power

Exploring the existence and operation of these mechanisms of influence helps to answer the research questions on the working of corporate influence, what methods they used, and why, if they were, the corporations were influential. However, it does not answer the underpinning question of “To what extent were they influential?” This question is a relative, contextual and evaluative question that is primarily based upon the extent to which actors are able to satisfy their interests, perhaps (but not necessarily) in opposition to other interests; it is based upon an analysis of the impact of corporate influence. In applying this framework, then, it is necessary to explore and define the interests of an actor so that the extent to which their interests are realised can be assessed. But, for such evaluation, the context in which actors attempt to satisfy their interests – which studying policy evolution provides – is crucial as power is relational rather than absolute; an actor may be more powerful but achieve modest interest satisfaction in an area where other actors have mobilised, in comparison to an area where they achieve complete interest satisfaction against no mobilisation (Dur, 2008 p.561).

Conclusion

Corporations are more powerful than is recognised in interest group theory due to the mechanisms of corporate influence being more diverse and broader than that which has been studied in the interest group literature. This chapter has sought to capture the diversity and breadth of corporate power by developing, from a wide range of literature, a framework that reflects the actions and discourses that have been deployed by, and for, corporate actors. The analytical framework, drawing on Gaventa’s forms of power, highlighted the different faces of corporate power and explored the manifestations of this power in the current system – examining mechanisms of influence such as astroturf groups, economic discourses, production decisions and interpersonal relationships.

The purpose of this theoretical framework is to allow an exploration of the research questions in the case studies, which it does by detailing how and why corporations have been influential in the past; using past mechanisms of influence as markers to look for in the empirical chapters. Exploring such issues re-centres the substantive question about democracy that initially motivated interest group research, namely: “who governs?” More specifically, this research sheds light on Held and McGrew’s

(2003, p.8) more detailed, but less historic, version of the question – “Who rules, in whose interests, by what mechanisms and for what purposes?” Asking these questions in a US context are vitally important as it purports to be the foremost democratic nation on earth.

Bibliography

- Aune, J. A. 2002. *Selling the Free Market: The Rhetoric of Economic Correctness*, New York, Guilford Press.
- Bachrach, P. & Baratz, M. 1962. The Two Faces of Power. *The American Political Science Review*, 56, 947-952.
- Bates, T. R. 1975. Gramsci and the Theory of Hegemony. *Journal of the History of Ideas*, 36, 351-366.
- Baumgartner, F. & Leech, B. 1998. *Basic Interests: The Importance of Groups in Politics and in Political Science*, New Jersey, Princeton University Press.
- Beder, S. 2010. Business-managed Democracy: The Trade Agenda. *Critical Social Policy*, 30, 496-518.
- Bell, S. 2012. The Power of Ideas: The Ideational Shaping of the Structural Power of Business. *International Studies Quarterly*, 56, 661-673.
- Bernays, E. 2005 [1928]. *Propaganda*, Brooklyn, Ig Publishing.
- Bernhagen, P. 2002. *Power: Making Sense of an Elusive Concept* [Online]. Available: http://homepages.abdn.ac.uk/p.bernhagen/pages/Power_JPR.pdf [Accessed 05/09/2012].
- Berry, J. M. & Wilcox, C. 2007. *The Interest Group Society*, New York, Pearson Longman.
- Bettig, R. V. & Hall, J. L. 2012. *Big Media, Big Money: Cultural Texts and Political Economics*, Plymouth, Rowman & Littlefield.
- Blasco, A., Pin, P. & Sobbrío, F. 2012. *Paying Positive to Go Negative: Advertisers' Competition and Media Reports* [Online]. Available: <http://ssrn.com/abstract=1884249> [Accessed 03/04/2013].
- Blaug, M. 1958. The Classical Economists and the Factory Acts - A Re-examination. *The Quarterly Journal of Economics*, 72, 211-226.
- Block, F. 1977. The Ruling Class Does Not Rule: Notes on the Marxist theory of the State. *Socialist Revolution*, 33, 6-28.
- Boas, T. C. & Gans-Morse, J. 2009. Neoliberalism: From New Liberal Philosophy to Anti-liberal Slogan. *Studies in Comparative International Development*, 44, 137-161.
- Bourdieu, P. 1977. *Outline of a Theory of Practice*, Cambridge, Cambridge University Press.
- Bourdieu, P. & Wacquant, L. 2001. Neoliberal Newspeak: Notes on the New Planetary Vulgate. *Radical Philosophy*, 105, 1-6.

- Bryce, R. 2004. *Pipe Dreams: Greed, Ego, and the Death of Enron*, Cambridge, MA, PublicAffairs.
- Carroll, R. & Kim, H. A. 2010. Party Government and the "Cohesive Power of Public Plunder". *American Journal of Political Science*, 54, 34-44.
- Carroll, W. K. 2010. *The Making of a Transnational Capitalist Class: Corporate Power in the Twenty-first Century*, London, Zed Books.
- Carroll, W. K. & Carson, C. 2003. The Network of Global Corporations and Elite Policy Groups: A Structure for Transnational Capitalist Class Formation? *Global Networks*, 3, 29-57.
- Center for Responsive Politics. 2012. *Revolving Door: Former Members of the 111th Congress* [Online]. Available: <http://www.opensecrets.org/revolving/departing.php> [Accessed 29/11/2012].
- Chang, H. J. 2010. *23 Things They Don't Tell You About Capitalism*, London, Penguin Books.
- Clapp, J. & Swanston, L. 2009. Doing Away with Plastic Shopping Bags: International Patterns of Norm Emergence and Policy Implementation. *Environmental Politics*, 18, 315-332.
- Coen, D., Grant, W. & Wilson, G. 2010. *The Oxford Handbook of Business and Government*, Oxford, Oxford University Press.
- Colander, D. 2004. Economics as an Ideologically-Challenged Science. Middlebury College.
- Collin, J., Lee, K. & Bissell, K. 2002. The Framework Convention on Tobacco Control: The Politics of Global Health Governance. *Third World Quarterly*, 23, 265-282.
- Cox, R. W. 1983. Gramsci, Hegemony and International Relations: An Essay in Method. *Millennium - Journal of International Studies*, 12, 162-175.
- Crenson, M. A. 1971. *The Un-Politics of Air Pollution: A Study of Non-Decisionmaking in the Cities*, Baltimore, Johns Hopkins University Press.
- Culpepper, P. D. 2011. *Quiet Politics and Business Power: Corporate Control in Europe and Japan*, Cambridge, Cambridge University Press.
- Dahl, R. 1957. The Concept of Power. *Behavioral Science*, 2, 201-205.
- Dahl, R. 1961. *Who Governs? Power and Democracy in an American City*, New Haven, Yale University Press.
- Daly, H. E. 2007. *Ecological Economics and Sustainable Development: Selected Essays of Herman Daly*, Cheltenham, Edward Elgar Publishing.
- Dauvergne, P. & Lister, J. 2010. The Power of Big Box Retail in Global Environmental Governance: Bringing Commodity Chains back into IR. *Millennium - Journal of International Studies*, 39, 145-160.
- Department of Justice. 2009. *Guide to the Freedom of Information Act: Exemption Four* [Online]. Available: http://www.justice.gov/oip/foia_guide09/exemption4.pdf [Accessed 03/04/2013].
- Dickinson, E. 2012. GDP: A Brief History. *Foreign Policy*, January/February 2011.

- Domhoff, G. 1990. *The Power Elite and the State: How Policy is Made in America*, New York, Aldine de Gruyter.
- Domhoff, G. W. 2005. *The Class-Domination Theory of Power* [Online]. Available: http://www2.ucsc.edu/whorulesamerica/power/class_domination.html [Accessed 02/04/2013].
- Drache, D. 2001. *The Market or the Public Domain: Global Governance and the Asymmetry of Power*, London, Routledge.
- Duménil, G. & Lévy, D. 2004. *Capital Resurgent: Roots of the Neoliberal Revolution*, Cambridge, MA, Harvard University Press.
- Dur, A. 2008. Measuring Interest Group Influence in the EU: A Note on Methodology. *European Union Politics*, 9, 559-577.
- Dye, T. R., Schubert, L. & Zeigler, H. 2011. *The Irony of Democracy: An Uncommon Introduction to American Politics*, Boston, MA, Wadsworth Publishing Company.
- Faris, S. 2009. A Better Measure than GDP. *Time*, 02/11/2009.
- Fenton, N. 2011. Deregulation or Democracy? New Media, News, Neoliberalism and the Public Interest. *Continuum: Journal of Media & Cultural Studies*, 25, 63-72.
- Foucault, M. 1980. *Power/knowledge: Selected interviews and other writings, 1972-1977*, Vintage Books.
- Freedman, D. 2009. The Political Economy of the New News Environment. In: Fenton, N. (ed.) *New Media, Old News: Journalism and Democracy in the Digital Age*. London: SAGE.
- Friedman, L. C., Daynard, R. A. & Banthin, C. N. 2005. How Tobacco-Friendly Science Escapes Scrutiny in the Courtroom. *Journal of Public Health*, 95, S16-S20.
- Friedman, M. 1962. *Capitalism and Freedom*, Chicago, University of Chicago Press.
- Fuchs, D. 2005. Commanding Heights? The Strength and Fragility of Business Power in Global Politics. *Millennium Annual Conference*. London.
- Fuchs, D. 2007. *Business Power in Global Governance*, Boulder, Colorado, Lynne Rienner Publishers.
- Galbraith, J. K. 1972. *The New Industrial State*, London, Andre Deutsch Ltd.
- Gallie, W. 1955. Essentially Contested Concepts. *Proceedings of the Aristotelian Society*, 56, 167-198.
- Gamble, A. 1994. *The Free Market and the Strong State: The Politics of Thatcherism*, Basingstoke, Palgrave.
- Gaventa, J. 1980. *Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley*, Oxford, Oxford University Press.
- Gaventa, J. 2006. Finding the Spaces for Change: A Power Analysis. *IDS bulletin*, 37, 23-33.
- Gilardi, F. 2009. *Delegation in the Regulatory State: Independent Regulatory Agencies in Western Europe*, Cheltenham, Edward Elgar Publishing.

- Gill, S. 2000. Toward a Postmodern Prince? The Battle in Seattle as a moment in the New Politics of Globalisation. *Millennium - Journal of International Studies*, 29, 131-140.
- Gill, S. R. & Law, D. 1989. Global Hegemony and the Structural Power of Capital. *International Studies Quarterly*, 33, 475-499.
- Grabosky, P. 2012. Beyond Responsive Regulation: The expanding role of non-state actors in the regulatory process. *Regulation & Governance*, 7, 114-123.
- Greenpeace. 2010. *ExxonSecrets* [Online]. Available: <http://www.greenpeace.org/usa/campaigns/global-warming-and-energy/exxon-secrets> [Accessed 04/03/2010].
- Greve, C. 2010. Public-Private Partnerships in Business and Government. In: Coen, D., Grant, W. & Wilson, G. (eds.) *The Oxford Handbook of Business and Government*. Oxford: Oxford University Press.
- Grossman, G. M. & Helpman, E. 2005. A Protectionist Bias in Majoritarian Politics. *The Quarterly Journal of Economics*, 120, 1239-1282.
- Hacker, J. S. & Pierson, P. 2002. Business Power and Social Policy: Employers and the Formation of the American Welfare State. *Politics & Society*, 30, 277-325.
- Harvey, D. 2005. *A Brief History of Neoliberalism*, Oxford, Oxford University Press.
- Hasen, R. 1998. Campaign Finance Laws and the Rupert Murdoch Problem. *Texas Law Review*, 77, 1627-1666.
- Hayek, F. A. 1978. *New Studies in Philosophy, Politics, Economics and the History of Ideas*, Chicago, University of Chicago Press
- Hayward, C. & Lukes, S. 2008. Nobody to Shoot? Power, Structure, and Agency: A Dialogue. *Journal of Power*, 1, 5-20.
- Heemskerk, E. M., Mokken, R. J. & Fennema, M. 2012. The Fading of the State: Corporate-government Networks in the Netherlands. *International Journal of Comparative Sociology*, 53, 253-274.
- Herman, E. S. & Chomsky, N. 1988. *Manufacturing Consent: The Political Economy of Mass Media*, New York, Pantheon.
- Hines, R. 1994. *Letter to Matt Winokur* [Online]. Available: <http://legacy.library.ucsf.edu/tid/umz88e00/pdf;jsessionid=5EDA839F0B5703045ADB932E6C676D3B.tobacco03> [Accessed 15/10/2012].
- Hirschhorn, N. & Bialous, S. A. 2001. Second Hand Smoke and Risk Assessment: What was in it for the Tobacco Industry? *Tobacco Control*, 10, 375-382.
- Holyoke, T. T. 2011. *Competitive Interests: Competition and Compromise in American Interest Group Politics*, Washington D.C., Georgetown University Press.
- Hyland, J. L. 1995. *Democratic Theory: The Philosophical Foundations*, Manchester, Manchester University Press.
- International Labour Organisation. 2013. *ILO Declaration on Fundamental Principles and Rights at Work* [Online]. Available: <http://www.ilo.org/declaration/thedeclaration/textdeclaration/lang-en/index.htm> [Accessed 04/05/2013].

- Jackson, T. 2009. *Prosperity Without Growth: Economics for a Finite Planet*, London, Earthscan.
- Jacques, P., Dunlap, R. & Freeman, M. 2008. The Organisation of Denial: Conservative Think Tanks and Environmental Scepticism. *Environmental Politics*, 17, 349-385.
- Jensen, N., Biglaiser, G., Li, Q., Malesky, E., Pinto, P., Pinto, S. & Staats, J. 2012. *Politics and Foreign Direct Investment*, Ann Arbor, University of Michigan Press.
- Johnson, E. 1983. Agency Capture: The Revolving Door between Regulated Industries and Their Regulating Agencies. *University of Richmond Law Review*, 18, 95-119.
- Kantor, P. & Savitch, H. V. 1993. Can Politicians Bargain with Business? *Urban Affairs Review*, 29, 230-255.
- Kollman, K. 1998. *Outside Lobbying: Public Opinion & Interest Group Strategies*, New Jersey, Princeton University Press.
- Lasswell, H. D. 1968. *Politics: Who Gets What, When, How*, New York, World Publishing Company.
- Levi-Faur, D. 2013. The Odyssey of the Regulatory State: From a "Thin" Monomorphic Concept to a "Thick" and Polymorphic Concept. *Law & Policy*, 35, 29-50.
- Levy, D. L. & Egan, D. 2000. Corporate Political Action in the Global Polity. In: Bieler, A., Higgott, R. & Underhill, G. (eds.) *Non-State Actors and Authority in the Global System*. London: Routledge.
- Lewis, J. 1985. *Lead Poisoning: A Historical Perspective* [Online]. Available: <http://www.epa.gov/history/topics/perspect/lead.html> [Accessed 02/04/2013].
- Lindblom, C. 1982. The Market As Prison. *The Journal of Politics*, 44, 324-336.
- Lindblom, C. E. 1977. *Politics and Markets: The World's Political Economic Systems*, New York, Basic Books.
- Lindblom, C. E. 2001. *The Market System*, New Haven, Yale University Press.
- Lovei, M. 1998. *Phasing Out Lead from Gasoline: Worldwide Experience and Policy Implications*, Washington D.C., World Bank Publications.
- Lowery, D., Gray, V. & Fellowes, M. 2005. Sisyphus Meets the Borg. *Journal of Theoretical Politics*, 17, 41-74.
- Lowry, R. C. & Potoski, M. 2004. Organized Interests and the Politics of Federal Discretionary Grants. *Journal of Politics*, 66, 513-533.
- Lukes, S. 1974. *Power: A Radical View*, Basingstoke, Macmillan.
- Lukes, S. 2005. *Power: A Radical View: Second Edition*, Basingstoke, Palgrave Macmillan.
- Lyon, T. & Maxwell, J. 2004. Astroturf: Interest Group Lobbying and Corporate Strategy. *Journal of Economics & Management Strategy*, 13, 561-597.
- Majone, G. 1999. The Regulatory State and its Legitimacy Problems. *West European Politics*, 22, 1-24.

- Marcuse, H. 1964. *One Dimensional Man*, Boston, Beacon Press Books.
- Marx, K. & Engels, F. 2002. *The Communist Manifesto* London, Penguin Classics.
- McFarland, A. S. 2007. Neopluralism. *Annual Review of Political Science*, 10, 45-66.
- McGarity, T. O. 2003. Our Science is Sound Science and their Science is Junk Science: Science-Based Strategies for Avoiding Accountability and Responsibility for Risk-Producing Products and Activities. *University of Kansas Law Review*, 52, 897-937.
- McGillivray, F. 2004. *Privileging Industry: The Comparative Politics of Trade and Industrial Policy*, New Jersey, Princeton University Press.
- Meckling, J. 2011. *Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading*, Cambridge, MA, MIT Press.
- Michaels, D. 2005. Scientific Evidence and Public Policy. *American Journal of Public Health*, 95, S5-S7.
- Miller, D. & Dinan, W. 2008. *A Century of Spin: How Public Relations became the Cutting Edge of Corporate Power*, London, Pluto Press.
- Ministry of Foreign Affairs of Denmark. 2012. *Support to Civil Society Engagement in Policy Dialogue* [Online]. Available: <http://www.netpublikationer.dk/um/11191/html/chapter20.htm> [Accessed 02/04/2013].
- Mooney, C. 2004. Beware 'Sound Science'. It's Doublespeak for Trouble. *The Washington Post*, 29/02/2004.
- Moran, M. 2002. Understanding the Regulatory State. *British Journal of Political Science*, 32, 391-413.
- Moran, M. 2009. *Business, Politics, and Society: An Anglo-American Comparison*, Oxford, Oxford University Press.
- Moran, M. 2010. The Rise of the Regulatory State. In: Coen, D., Grant, W. & Wilson, G. (eds.) *The Oxford Handbook of Business and Government*. Oxford: Oxford University Press.
- Mörth, U. 2009. The Market Turn in EU Governance - The Emergence of Public-Private Collaboration. *Governance*, 22, 99-120.
- Nadel, M. V. 1975. Corporate Secrecy and Political Accountability. *Public Administration Review*, 35, 14-23.
- Néron, P.-Y. 2010. Business and the Polis: What does it mean to see Corporations as Political Actors? *Journal of Business Ethics*, 94, 333-352.
- Nevin, R. 2007. Understanding International Crime Trends: The Legacy of Preschool Lead Exposure. *Environmental Research*, 104, 315-336.
- Nierenberg, D. & Mastny, L. 2005. *Happier Meals: Rethinking the Global Meat Industry*, Washington D.C., Worldwatch Institute.
- Ong, E. K. & Glantz, S. A. 2001. Constructing "Sound Science" and "Good Epidemiology": Tobacco, Lawyers, and Public Relations Firms. *American Journal of Public Health*, 91, 1749-1757.

- Ougaard, M. 2008. Private Institutions and Business Power in Global Governance. *Global Governance: A Review of Multilateralism and International Organizations*, 14, 387-403.
- Overbeek, H. & van der Pijl, K. 1993. Restructuring Capital and Restructuring Hegemony: Neo-Liberalism and the Unmaking of the Post-War Order. In: Overbeek, H. (ed.) *Restructuring Hegemony in the Global Political Economy*. London: Routledge.
- Oxfam. 2011. *Quick Guide to Power Analysis* [Online]. Available: http://www.powercube.net/wp-content/uploads/2009/11/quick_guide_to_power_analysis_external_final.pdf [Accessed 10/09/2012].
- Peschek, J. G. 1987. *Policy-Planning Organizations: Elite Agendas and America's Rightward Turn*, Philadelphia, Temple University Press.
- Phillips, N. 2005. Bridging the Comparative/International Divide in the Study of States. *New Political Economy*, 10, 335-343.
- Polanyi, K. 2001 [1944]. *The Great Transformation*, Boston, Beacon Press.
- Powercube.net. 2012a. *Hidden Power* [Online]. Available: <http://www.powercube.net/analyse-power/forms-of-power/hidden-power/> [Accessed 12/09/2012].
- Powercube.net. 2012b. *Invisible Power and Hegemony* [Online]. Available: <http://www.powercube.net/other-forms-of-power/hegemony-and-invisible-power/> [Accessed 13/09/2012].
- Proctor, R. N. 2012. *Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition*, Berkeley, University of California Press.
- Przeworski, A. & Wallerstein, M. 1988. Structural Dependence of the State on Capital. *The American Political Science Review*, 82, 11-29.
- Radice, H. 1999. Taking Globalisation Seriously. *Socialist Register*, 35, 1-28.
- Rand, A. 1957. *Atlas Shrugged*, New York, Random House.
- Ratkiewicz, J., Conover, M., Meiss, M., Gonçalves, B., Patil, S., Flammini, A. & Menczer, F. 2011. Truthy: Mapping the Spread of Astroturf in Microblog Streams. In: Proceedings of the 20th International Conference Companion on World Wide Web, 2011. ACM, 249-252.
- Rich, A. 2005. *Think Tanks, Public Policy, and the Politics of Expertise*, Cambridge, Cambridge University Press.
- Robinson, W. I. 2005. Gramsci and Globalisation: From Nation-State to Transnational Hegemony. *Critical Review of International Social and Political Philosophy*, 8, 559-574.
- Rosner, D. & Markowitz, G. 1985. A 'Gift of God'? The Public Health Controversy over Leaded Gasoline during the 1920s. *American Journal of Public Health*, 75, 344-352.
- Rundquist, B. & Carsey, T. M. 2002. *Congress and Defense Spending: The Distributive Politics of Military Procurement*, Norman, University of Oklahoma Press.

- Saloojee, Y. & Dagli, E. 2000. Tobacco Industry Tactics for Resisting Public Policy on Health. *Bulletin of the World Health Organization*, 78, 902-910.
- Schattschneider, E. E. 1960. *The Semisovereign People*, Hinsdale, Illinois, The Dryden Press.
- Schiller, W. J. 1999. Trade Politics in the American Congress: A study of the interaction of political geography and interest group behavior. *Political Geography*, 18, 769-789.
- Schneider, E. 1968. The Sociology of C. Wright Mills. In: Domhoff, G. W. & Ballard, H. B. (eds.) *C. Wright Mills and the Power Elite*. Boston: Beacon Press.
- Scholte, J. A. 2002. Civil Society and Democracy in Global Governance. *Global Governance*, 8, 281-304.
- Science and Public Policy Institute. 2012. *Our Mission* [Online]. Available: http://scienceandpublicpolicy.org/our_mission.html [Accessed 19/10/2012].
- Sell, S. K. 2003. *Private Power, Public Law: The Globalization of Intellectual Property Rights*, Cambridge, Cambridge University Press.
- Shapiro, I. 2006. On the Second Edition of Lukes' Third Face. *Political Studies Review*, 4, 146-155.
- Shapiro, I. 2007. *The Flight from Reality in the Human Sciences*, New Jersey, Princeton University Press.
- Sidney, M. S. 2007. Policy Formulation: Design and Tools. In: Fischer, F., Miller, G. J. & Sidney, M. S. (eds.) *Handbook of Public Policy Analysis: Theory, Politics, and Methods*. Boca Raton, Florida: CRC Press.
- Sklair, L. 2000. The Transnational Capitalist Class and the Discourse of Globalisation. *Cambridge Review of International Affairs*, 14, 67-85.
- Smith, M. A. 2000. *American Business and Political Power: Public Opinion, Elections, and Democracy*, Chicago, University of Chicago.
- Smith, M. A. 2007. *The Right Talk: How Conservatives Transformed the Great Society into the Economic Society*, New Jersey, Princeton University Press.
- Strange, S. 1994. *States and Markets*, London, Pinter Publishers
- Suarez-Villa, L. 2012. *Globalization and Technocapitalism: The Political Economy of Corporate Power and Technological Domination*, Surrey, Ashgate Publishing, Ltd.
- Underhill, G. & Zhang, X. 2008. Setting the Rules: Private Power, Political Underpinnings, and Legitimacy in Global Monetary and Financial Governance. *International Affairs*, 84, 535-554.
- Useem, M. 1986. *The Inner Circle: Large Corporations and the Rise of Business Political Activity in the US and UK*, Oxford, Oxford University Press.
- Van Loo, E. J., Caputo, V., Nayga, R. M., Meullenet, J.-F. & Ricke, S. C. 2011. Consumers' Willingness to pay for Organic Chicken Breast: Evidence from Choice Experiment. *Food Quality and Preference*, 22, 603-613.

- VeneKlasen, L., Miller, V. & Budlender, D. 2007. *A New Weave of Power, People, and Politics: The Action Guide for Advocacy and Citizen Participation*, Rugby, Practical Action Publishing.
- Vidal, J. B. i., Draca, M. & Fons-Rosen, C. 2010. *Revolving Door Lobbyists* [Online]. London: London School of Economics. Available: <http://personal.lse.ac.uk/draca/images/revolving.pdf> [Accessed 11/06/2013].
- Wakefield, M., Morley, C., Horan, J. & Cummings, K. 2002. The Cigarette Pack as Image: New Evidence from Tobacco Industry Documents. *Tobacco Control*, 11, i73-i80.
- Wanna, J. 1991. Community Power Debates: Themes, Issues and Remaining Dilemmas. *Urban Policy and Research*, 9, 193-208.
- Werner, T. & Wilson, G. 2010. Business Representation in Washington D.C. In: Coen, D., Grant, W. & Wilson, G. (eds.) *The Oxford Handbook of Business and Government*. Oxford: Oxford University Press.
- Wilkinson, R. (ed.) 2005. *The Global Governance Reader*, London: Routledge.
- Wolf, K. D. 2010. Emerging Patterns of Global Governance: The New Interplay between the State, Business and Civil Society. In: Scherer, A. G. & Palazzo, G. (eds.) *Handbook of Research on Global Corporate Citizenship*. Cheltenham: Edward Elgar Publishing.
- Wright Mills, C. 1956. *The Power Elite*, Oxford, Oxford University Press.

Chapter 4 – Methodology

This research utilised a case study approach primarily based on qualitative data gathered from both semi-structured elite interviews and primary and secondary documentary sources. This chapter discusses and justifies the choice of research design, explaining its strengths, weaknesses and evolution, and discusses the research design with reference to the literature in chapter two. It also discusses the practical issues experienced during data collection, before finally summarising the research design and justification.

Overall Research Design

As mentioned in the introduction, this research is based upon an iterative-parallel emerging design (Verschuren, 2001 p.396). Whilst similar to a static-linear deductive design where theory informs the origins of study design, an iterative-parallel emerging design also allows theory to be modified in light of emerging themes from the data during research. Such an approach was necessary due to the relative scarcity of the literature on corporate power and a lack of an integrated analytical framework for approaching the issue of corporate power. The research design allowed the analytical framework to both be validated and modified during the data collection and allowed rival ideas from the literature to be explored. As such, the analytical framework has been revised in light of the data, although many of the ideas present in the initial framework remain.

This approach has several advantages. First, it encourages greater exploration of new ideas that can emerge during data collection (ibid. p.396). In this way, it actively reflects Gilbert's (1993 p.20) point that "in the case of doing research [induction and deduction] often get intertwined" and new ideas often do get followed. In contrast to a (rigidly followed) static linear design – where theory defines what data is collected, data is collected and then it is analysed – an iterative-parallel emerging design allows interplay between the sections of research and a gradual evolution of the final research design and direction (Creswell, 2003 p.13). An iterative-parallel design, then, merges into an inductive-deductive cycle of reasoning, in that it explores others' previous analytical positions to guide data collection, but, in the process of data collection, modifies initial analytical positions.

Second, an iterative-parallel emerging design encourages a holistic, rather than reductionist, examination of issues. The advantage of a holistic approach is that it encourages reflection on the importance of issues relative to other issues rather than accepting the implicit ordering of issues present in the literature. So, for example, PAC contributions may not be as an important factor in corporate influence as a different issue, such as the revolving door, but PAC contributions may appear more important due to the greater level of literature focus on PAC contributions. Holism, however, avoids losing sight of the bigger picture and can give insight into the context within which certain mechanisms are effective and the situations in which they are not.

Third, an iterative-parallel emerging design complements semi-structured interviews as both require reflection and modification on the basis of new information, and both allow exploration of emerging understandings and complexity (Guba and Lincoln, 1989 p.153). Thus, the emphasis in both design and method is on being theory-informed but data-driven and, for the researcher, to utilise “complex reasoning that is multi-faceted, iterative, and simultaneous” (Creswell, 2003 p.20). Most importantly, the emphasis is on exploration of issues and following emerging themes, and so avoiding the possibility of a theoretical straitjacket.

Iterative-Parallel Emerging Design

The initial analytical framework of this research used many of the ideas that are part of the final framework. Most notably, the initial framework included Lukes’ three dimensions of power, which would, with the discovery of Gaventa’s (2006) reworking, become the organising principle of the framework and the analysis based upon this framework. As figure 4-1 shows, however, the three dimensions of power were not the initial organising principle. This connection was not made at the time due to some of the enduring weaknesses of Lukes’ account (particularly the divining of real interests) and because the literatures discussed in the previous chapters had little natural synthesis; referring only to the political economy work, Wilks (2013 p.2) characterises the literature of corporate power as “a few oases in an arid landscape”.

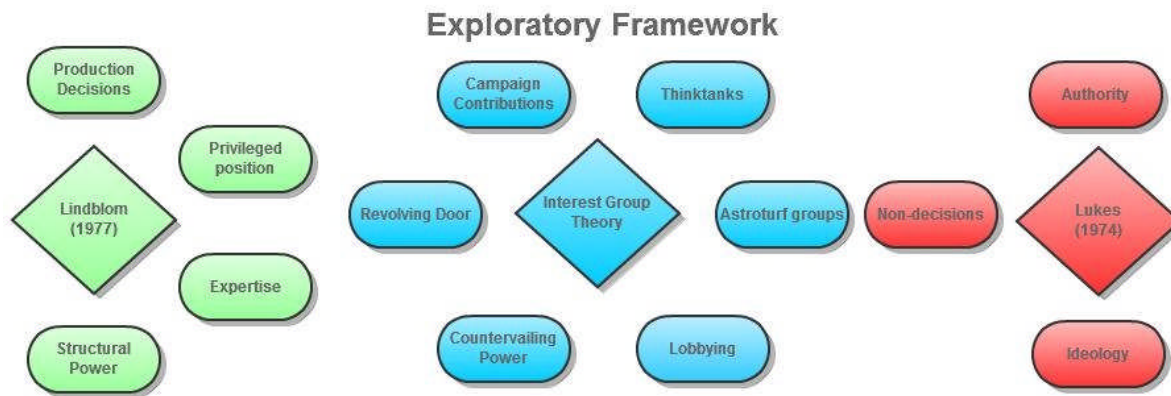


Figure 4-1: Exploratory Framework
(Colours indicate links to literatures)

The majority of the changes to the framework occurred during fieldwork, with three particular facts becoming apparent during fieldwork that substantially altered the content of the framework. First, as figure 4-2 shows, local politician representation of corporations was occurring to a large extent, which was interpreted as a particular manifestation of structural power. Second, countervailing forces were not as important as the interest group literature held and, while still requiring attention as an important element in determining power, did not fit in the newer framework organised around different forms of the power of corporations. Third, the oil and gas industry, who were assumed to be playing a large part in oil dependence policies, were found to be more interested in policies they felt more directly reflected their medium-term financial interests. So, while not represented in either of the figures, the idea of corporate power became less general (such as in Lindblom (1977) or Strange (1994)) and more specific.

Additionally, during the processes of fieldwork and of writing, new ideas and new theories were encountered that provided important insights and that allowed a greater ordering and synthesis of the framework to be achieved. In particular, Gaventa's conception of the faces of power removed the problems inherent in Lukes' account and provided an account of hidden power that was broader and fit better with the mechanisms of influence provided by the different literatures.

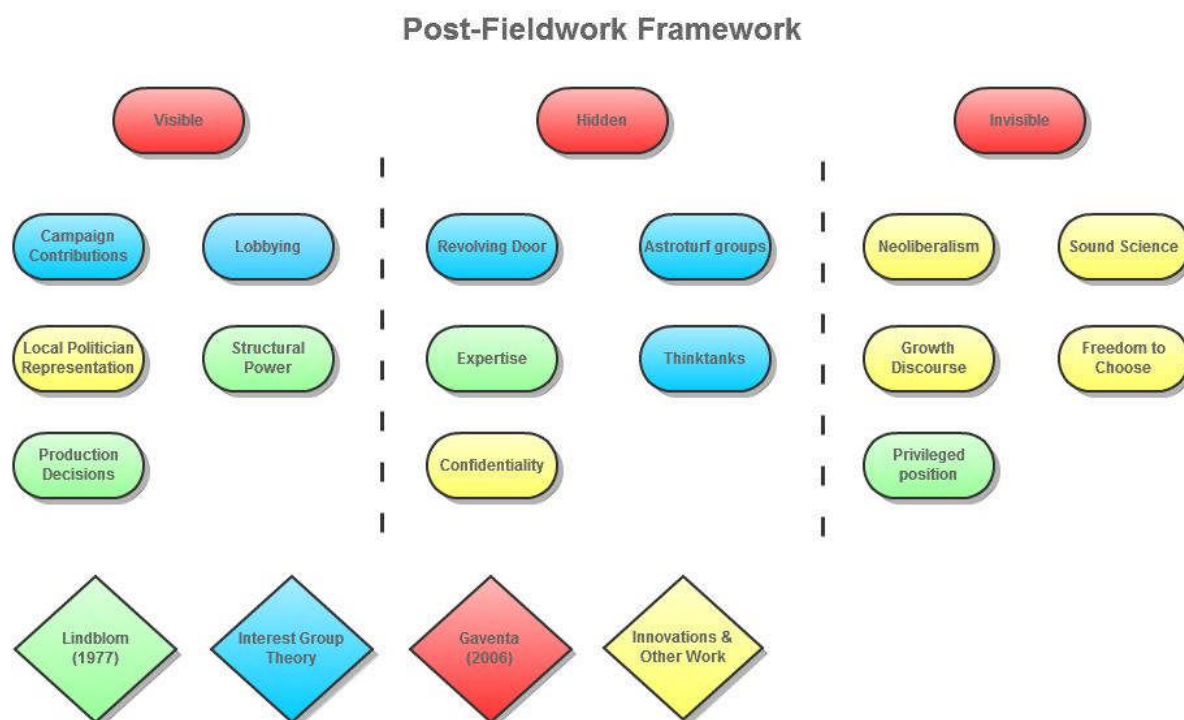


Figure 4-2: Literature used in the synthesised framework.

(Colours indicate links to literature)

Case Study Method

The main body of the data for this thesis comes in the form of case studies of oil dependence policy evolution. Policy evolution, as the previous chapter explained, is much broader than policy making and involves exploring the history, the formulation, the implementation, the outcomes of policy and how these different sections interact with each other, rather than just focusing on the formulation or implementation stages. So, a policy evolution case study involves investigating the historical context, formulation, implementation and outcomes of a particular policy, and the interaction between these different stages. The rationale behind a general case study approach is that it involves examining specific instances of a more general phenomenon in order to gain understanding of the general phenomenon (Ruddin, 2006). It works, then, in contrast to large-*n* studies, which seek to understand the general in order to gain an understanding of the specific. A case study approach was adopted by this research for two main reasons.

First, case studies can give an account of a wider phenomenon that is “sensitive to complexity” (Ragin, 1989 p.viii) as they draw upon rich and deep sets of data. Case studies, then, suit this research as the subject matter of this thesis involves complex

(and sometimes covert) interactions between numerous bodies. In fact, the highly contextual nature of a case study approach has great utility in exploring some of the issues that have previously been covered by large-*n* studies; they can work to check theoretical insights developed on analysis of broader, yet shallower, data. As such, the case study approach can complement a lot of contemporary interest group theory as this literature was developed largely from large-*n* studies. For instance, Smith's (2000, 2007) insights into the role of think-tanks for business power can be explored in the richer and deeper datasets of case studies and explored alongside other mechanisms of influence.

Second, case studies fit well with an iterative-parallel research design. As Verschuren (2003 p.137) argues, case studies are "holistic in nature, following an iterative-parallel way of proceeding...and aimed at description and explanation of complex and entangled group attributes, patterns, structures or processes". Case studies are necessary for this research because of the complexity of attributing influence and the wide array of mechanisms of influence that can be in operation at any one time. The danger in using a shallower data set while approaching this research would be that influence is wrongly attributed to observable or easily noticeable causes, when the actual causes lay below the surface of the data. As such, case studies "are more suited to how and why questions which can be explanatory in nature" (Easton, 2010 p.119).

A further element of this research's case study approach is that it uses two cases. A dual case study design was adopted because it strikes a balance between robustness of findings and sensitivity of analysis – between depth and breadth. So, in contrast, a single case study design has limited robustness and generalisability in its research findings due to the singularity of the area covered (Yin, 2009 p.53); it is impossible from one case to make any claims as whether what has been observed is the rule or the exception. Likewise, the potential weaknesses of utilising a greater number of cases is that, in having to "cover both the phenomenon of interest and its context" (ibid. p.56), the process of data collection overshadows data analysis or that, in order to logistically cope with a greater amount of data, depth of data collection is sacrificed.

However, while there are many advantages of the dual-case case study approach, like all approaches it does have certain inherent limitations that have to be

considered and mitigated. One of the main criticisms is that case studies, in aiming to portray complexity, can be too descriptive in content and, as such, lack analytical insight (Weick, 1979 p.38); that the focus is on describing a situation rather than critically analyzing it. Such an issue can be overcome by “invest[ing] in theory” (ibid. p.38) and ensuring that the empirical sections are well-linked to theoretical discussions. Hence, this thesis has both a theoretical chapter preceding the case studies and a discussion chapter following the case studies, which work together to first explain the theoretical underpinnings of the research and then, after the case studies, tie the empirical content to the theory. The purpose of these chapters, then, is to anchor the case studies to theory in order to avoid a lack of analysis.

A further criticism, which also works against qualitative approaches more widely, is that the conclusions from case studies, by looking at very specific examples, are unsuitable for wider generalisations – that the scope of the data is too narrow (Ragin, 1989 p.ix). However, while case studies may be limited in their capacity to generate empirical or statistical generalisations, case studies can allow the generation of analytical generalisations (Yin, 2009 pp.31-33). That is to say, that this thesis cannot generalise about how all corporations do act or have acted, but can provide an idea of what their actions would be. Moreover, as mentioned above, all studies suffer from issues of scope as, for logistical reasons, there is inevitable trade-off between breadth and depth of data used; alternative research designs, particularly large-*n* studies, must first identify variables before data collection leading to a reduction of the depth (and exploratory potential) of the research.

Data Collection

Data collection fieldwork took place over a three month period beginning in April 2011. The majority of the period was spent in Washington D.C. and the minority in Ann Arbor, Michigan. As a whole, there were three main types of data collected: interviews, documents and statistics. Together, these three types of data represent a broad base of information that benefits from the strengths of each data source. The weaknesses of each data source, which are discussed below, are mitigated in the case studies by the use of the other data sources to corroborate the information from a given data source. This process of corroboration between data sources, which is called data triangulation, not only allows cross-source fact checking, but also

“provides multiple measures of the same phenomenon” (Yin, 2009 pp.116-117). As such, data triangulation greatly increases the perspectives from which the object of study can be viewed, with the essential point of data triangulation being that, when sources of data used together, the base of information is greater than the sum of its parts (ibid. p.117).

Elite Interviews

Elite interviews are where the researcher interviews “someone in a position of authority, or especially expert or authoritative, people who are capable of giving answers with insight and a comprehensive grasp of what it is you are researching” (Gillham, 2000 p.63). Their role in this thesis was to produce primary data (Blaikie, 2000 p.183) that allowed insight into the role of corporations and organised interests in the policy evolution process in the two case studies, and to gain insider insights into the political processes that drive policy evolution. As such, in each of the interviews there were certain key points relating to the research questions that were discussed. However, the intention was not to produce survey-like data with the exact same questions asked of each participant. Instead, in order to allow “a fluid and flexible structure, and to allow researcher and interviewee(s) to develop unexpected themes” (Mason, 2002 p.62), these interviews were semi-structured and tailored to specific interviewees.

In total, 18 recorded elite interviews took place, supplemented by unrecorded informal chats and professional conference attendance. Interviewees were mainly contacted via e-mail in the first instance. Almost all participants were asked if they would be able to recommend other potential interviewees in an effort to gain further participants by “snowballing”. Interviewees ranged from government officials (NHTSA, Department of Energy, Congressional Staffers), business executives (ConocoPhillips, GM, Chrysler) to think-tank/lobbying organisation staff (Public Citizen, American Petroleum Institute, Competitive Enterprise Institute). Several of these interviewees, particularly those in think-tanks, had previous experience of being government officials in relevant areas and were able to give insight into several roles. Furthermore, conference attendance (particularly the Energy Information Administration’s annual conference) was useful for meeting those working outside of the intensely political climate of Washington D.C. and, subsequently, for hearing less circumspect opinions. Conference attendance also

allowed a wider pool of interviewees to be contacted than a pure snowballing approach can generate, as there is the potential for a snowballing approach leading to only gathering information from one side of a small policy circle (King and Horrocks, 2009 p.34).

The main strengths of using elite interviews are that the researcher is able to probe unexpected issues, can clarify interpretations of other information/issues and can encounter previously undocumented information (Devine, 2002 p.199); the researcher is able to explore a situation with help from those familiar to the situation. In contrast, the main weaknesses of using interview data are that interviewees could be motivated for personal vindication to under- or over-represent the role of certain groups and processes, and that the people who were obtainable were not necessarily the best sources of information on the topic (ibid. pp.205-206). In addition, as this research was studying events that happened in the (recent) past, there are issues of poor recall, or of the post hoc colouring, of events by interviewees.

While some degree of these problems is unavoidable, these weaknesses can be mitigated, and were mitigated in this research, in three ways. First, interviewees were made to understand that they will be anonymised and that some of their responses can be “off the record” (Dexter, 2006 p.102). Anonymisation reduces the incentive for misrepresentation of events for personal vindication because the interviewee effectively has an audience of one; no one apart from the interviewer will know the source. Second, the obtainability of elites and their fit with the research goals and aims can be subject to some level of verification through the documentary record. Those people particularly expert, or important, within an area tend to show up in published articles, in Congressional testimony and in newspaper reports. The documentary record, then, can help guide the researcher to important potential interviewees. Third, as a part of the data triangulation mentioned above, interviewee responses can be measured against the other sources of information that this research project draws upon. For instance, an account provided by one interviewee can be crosschecked in other interviews (ibid. p.106). Such a procedure helps to reduce the analytical influence of post hoc colouring, and over- and under-representation on the basis of personal vindication, by diluting the position in the dataset of a single interview where these problems have occurred.

Documents

Documents form the bulk of secondary data employed by this thesis. This category includes primary and secondary sources, as well as academic/technical literature. The main primary sources were policy documents (particularly Congressional hearings) and videos/transcripts of speeches by officials, lobbyists and industry representatives. The main advantage of primary documents is they allow insight into the views of major actors at the time they were created (Mason, 2002 p.108). The majority of these resources are now available online; with each US government department having its own website, the Whitehouse website having an archive from the Bush Presidency, and videos and transcripts of speeches being widely available on websites such as YouTube and CNN. The most useful web resources were the Government Printing Office's Federal Digital System (GPO FDSys – <http://www.gpo.gov/fdsys/>) – which contains transcripts of unclassified Congressional hearings – and Regulations.gov – which contains information pertaining to the operation of federal agencies. Also useful for retrieval of bills and other official data is the Library of Congress' THOMAS (<http://thomas.loc.gov/home/thomas.php>).

The secondary sources consist of newspaper/magazine articles, websites and books. Included with these secondary sources is “grey” literature, which is research that is produced by think-tanks and NGOs. This information is generally of lesser value than other sources as it involves a layer of interpretation applied to the events, but can offer important clues, can offer direction on where to find primary sources and, occasionally, contain invaluable nuggets of information. Moreover, when the issue under scrutiny concerns think-tank manipulations, or media replication of arguments, many of these sources can be counted as primary sources and as entwined in the policy evolution of the case study.

In particular, newspaper and news magazine articles, drawn mainly from LexisNexis, were very useful in this research. Instead of relying on later reviews of history, this research used these resources to reconstruct events (particularly the preferences of actors) at the time they were occurring. So, as much as was possible the use of this data in the case studies is aligned to the chronology of events. Attention to the issue of chronology was necessary due to the shifting positions of various actors within the case studies over time, particularly in the CAFE case study.

The strengths in using documents are that, as previously mentioned, they can capture information at a particular point in time and, as the production of a document requires reflexive thought, they can present information in a coherent and comprehensible way. However, the possible weaknesses in this approach is that “documents may be more or less detailed and comprehensive, they may or may not be authentic and genuine (what they purport to be), reliable, accurate, and so on.” (Mason, 2002 p. 110) Furthermore, documents contain a fixed amount of information that is necessarily subject to interpretation – unlike in interviews, there is little recourse for clarifying documentary information. These weaknesses can be alleviated through careful source evaluation as to the purposes and interests of the producer of the material and by crosschecking with other data sources (Moses and Knutsen, 2007 p.119). In particular, LexisNexis date-limited media report search function, and Archive.org’s collection of old webpages, were very useful for cross-checking information and exploring issues that occurred in the past.

One particular weakness of using public documents, however, is that documents on general release (such as those from Regulations.gov) have been prepared with a “public face” – they are unlikely to contain sensitive or damaging information and are, like vetted interviews, trammelled. In fact, transcripts of official US Congress hearings can be deliberately edited by staffers and participants before being printed (Yin, 2009 p.103). While this problem is an unavoidable downside of using public documents, the problem is somewhat ameliorated by the use of interviews to uncover concealed information and to uncover the clandestine workings of a system. Furthermore, using public documents is instructive as they impart an understanding of the position the publishing body wishes to project or does not view as detrimental to its public face.

In addition, the growth of the internet meant many documents not intended for public consumption, and so not necessarily prepared with a public face, have become available to the public. Wikileaks is the most well-known of these sites. This research also greatly benefitted from OpenCRS.com, which provides a searchable digital library of Congressional Research briefings, which only had patchy availability prior to the creation of the site.

Statistics

The subject area of this thesis – corporate influence on oil dependence policies – is not primarily suited to the use of the statistical method as influence, in particular, is hard to quantify, measure or detect. As such, statistics form a relatively small part of the data used. However, there are some datasets that were used for specific parts of the thesis. For example, datasets covering political contributions and official lobbying have recently been made readily accessible on websites such as OpenSecrets.org (run by the Centre of Responsive Politics), OpenCongress.org and MAPLight.org. These data on the lobbying attempts and financial contributions of corporations and other organised interests assisted greatly in comparing the influence of different groups and for checking if corporate resources are being diverted into areas that would be expected from the documentary evidence. These websites also have their own analysis of the data, which form part of the grey literature mentioned above.

Additionally, there are topics that have been touched upon that are subject to extensive measurement and statistics collection. Organisations such as the US Energy Information Administration (EIA), the Bureau of Transportation Statistics (BTS) and from the International Energy Agency (IEA) all publish statistics covering issues such as oil consumption, vehicle miles travelled and alternative fuel consumption. These figures were used to understand the context of oil dependence and thus facilitate greater understanding of the potential/historical societal impact of policies in the case studies. For example, it is impossible to assess the potential impact of a policy that aims to reduce US annual oil consumption by 1.5 billion gallons of oil, until the total annual oil consumption is also placed in these terms (306.6 billion gallons). These statistics, however, had to be used with great care, as an inherent weakness of statistics is that they measure phenomena in a narrowly-defined manner (Carr, 1994), which can result in inappropriate statistics being utilised.

Implementation

Case Study Selection

The wider context of both of the case studies is their temporal location within the George W. Bush administrations (2001-2009). The Bush time period was selected because, at the outset of this study, it was both recent and had been concluded. Its

recency meant that interviewee accounts would still be relatively fresh and not extensively coloured by hindsight. The conclusion of the period meant that new, evolving events with uncertain outcomes did not draw increased analysis due to increased visibility. Additionally, a further benefit of studying the Bush period compared to earlier periods is the greater increased digitisation of information that occurred in the period and the availability of this information sources while not on fieldwork.

The two case studies chosen within the Bush period – Corporate Average Fuel Economy (CAFE) standards and the FreedomCAR partnership – were selected due to a number of factors. For one, FreedomCAR is representative of a long line of policies that have attempted to change the fuel mix of the USA. Hydrogen fuel cells (HFCs) are similar to other abortive³⁰ technological solutions to oil dependence before it – ethanol in the 1970s, methanol in the 1980s, LPG/CNG and electric cars in the 1990s – in that there was significant hype about the technology when announced, but, after a few years of stagnation, it was quickly discarded by a new administration (Benet, 2006). At the same time, a case study of the FreedomCAR partnership, in being forged by the recent Bush administration, covers an area that, due to its contemporary nature, is relatively under-researched.

In contrast, CAFE standards were first introduced in 1978 and mandated annual rises in fuel economy until 1985. However, it wasn't until 2007 – 22 years later – that the fleet-wide fuel economy standards set in 1985 were raised. In this manner, CAFE standards are an interesting area for research as they constitute both an example of action and an example of inaction. Also, the idea of raising CAFE standards enjoys a huge amount of public support; with polling generally putting support between 75-90% (PollingReport.com, 2010 p.608, Greene, 1998). There was thus a latent conflict between government policy inaction and public opinion during a period spanning four different Presidents.

Furthermore, these case studies were the strongest of other potential case studies. Below (fig 4-3) is a synthetic schema of the potential case studies that could be investigated with the Bush administration as the timeframe of investigation. The

³⁰ The fate of HFC research as part of government policy is currently unclear due to continued Congressional support for the technology. Yet, FreedomCAR's successor – US DRIVE – has de-emphasised HFCs.

scheme by no means represents an exhaustive list. In fact, the examples it gives are very much based on an understanding of oil dependence as mainly a problem of the heavy use of private transport; it is based on the understanding of oil dependence developed in chapter one. If we were to list the full actual or potential policy responses to oil dependence it would be more instructive to subdivide the policies into four categories of oil use – transport, residential/commercial, industrial, and electricity generation – and a final one of general oil policies, which would include the “production” and “foreign policy” boxes. Also, following chapter one’s definition of the problem, policies involving the increased provision of public transport are not included here.

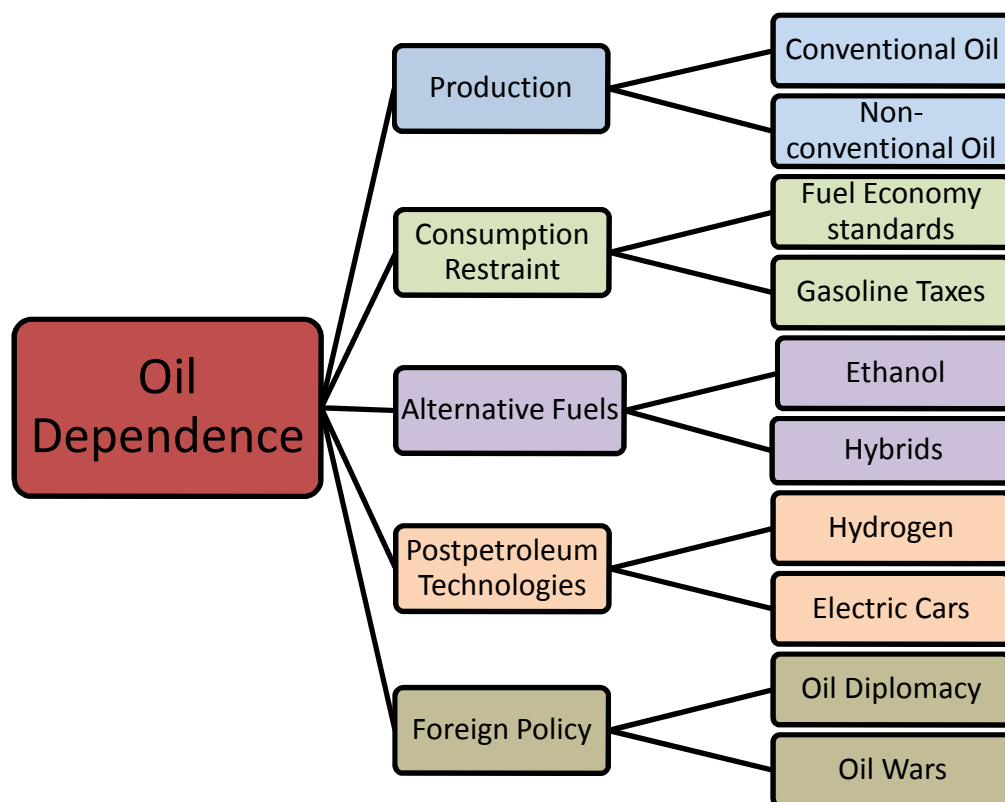


Figure 4-3: Potential Case Studies

Potential case studies that were not selected were rejected on four different grounds. First, the cases that did not have specific policies promoting them during the administrations of President Bush were rejected. This restriction excludes gasoline taxes, electric cars and hybrids from consideration. The reason for the application of this criterion is that investigating non-adopted policy areas adds another layer of methodological difficulty, as there are around 20,000+ bills (OpenCongress, 2009) that did not become law under President Bush. This criterion, however, could lead to

an under-estimation of the power of corporations; it could be the case of only looking at cases of observable change and conflict, which ignores the role of corporations in the maintenance of the status quo and latent conflict. As is mentioned in the discussion, this concern could be addressed by another study.

One final point specifically about gasoline taxes that is worth noting is that, alongside being a policy that was not enacted, gasoline taxes were rejected because there is a high level of public opposition to them, which has resulted in a widespread view of gasoline taxes as political suicide (Mufson, 2006). For instance, a 2006 poll by the New York Times found 85% of people were opposed to a federal gasoline tax increase. Although, when the question was prefaced with an argument about gasoline taxes reducing America's reliance on foreign oil, 55% supported a rise in gasoline taxes and 37% were still opposed (Gallup and Newport, 2007). So, while the public could have been persuaded on the issue, the failure to implement gasoline taxes can be viewed as caused, to a large extent, by a perception of widespread public opposition, rather than any specific use of corporate power during the Bush period. Gasoline taxes are worthy of this special mention because there is a wide consensus in the oil dependence literature supporting gasoline taxes and it is often seen as the most straightforward and effective solution possible to US oil dependence (for example, see Sterner, 2007, Agras and Chapman, 1999, and West and Williams III, 2005).

Second, cases that involved significant action in political arenas other than the US federal government were excluded. As such, conventional oil production policy was not selected because of the large role that local and state-level decisions play in the policy area. Likewise, non-conventional oil production was rejected because the majority of production actually happens in Canada, with American oil shale not utilised during the Bush administration.³¹ This criterion ensures that the case studies selected reduces the number of actors potentially involved, geographically concentrates field work and ensures the focus of this study is on the forms of power, rather than the levels or spaces.

³¹ Since 2008 there have been moves towards "fracking" of oil shale to release natural gas whereas during Bush's reign the US was importing tar sands oil from Canada. As such, the US did not have a significant domestic non-conventional fossil fuel programme during this study's timeframe.

Third, in line with the understanding of oil dependence as primarily a domestic issue, cases concerning the foreign policy aspects of oil dependence were excluded. Not only have the foreign policy aspects been extensively covered in the literature on oil dependence (e.g. Klare, 2008, Bromley, 2005, Rutledge, 2005) but, while there is the potential for interesting research in the area (especially during the administrations of George W. Bush), case studies on these areas would have not really addressed the motivating research question of this thesis as they would inevitably shift the focus to international affairs and how the US tries to cope with the oil demand allowed/created by domestic policies. As such, both oil diplomacy and oil wars were rejected as case studies.

Fourth, cases that potentially involved particularist organised interests (i.e. not general to oil dependence) were excluded. Thus, ethanol policy, which heavily involves lobbying by agribusiness rather than auto corporations, was also excluded. The purpose of this criterion is to reduce the number of organised interests that require study and so allow a more detailed picture of the selected corporations (and related actors) to be built up. So, instead of looking at a case that has organised interests specific to it, the cases selected involve actors generally involved in oil-dependence policy evolution.

As such, not only are the two selected case studies strong case studies in their own right, there are also good reasons not to select other potential cases. In addition, these two cases together present a stronger research agenda as there is an interesting level of dissonance between the two policy areas in regards to corporations; HFCs policy was heavily supported by automobile (and oil) corporations, whereas CAFE standards have long been opposed by the same corporations. These cases, then, have the potential to highlight different ways in which corporations can influence policy evolution, various forms of corporate power and the different (and sometimes contradictory) tactics used by corporations when opposing one policy yet supporting another.

In these regards, the two selected cases both represent revelatory/paradigmatic cases. The cases are revelatory in that they explore issues, areas and interlinkages that have generated very little empirically-deep literature (Gerring, 2007 p.41, Yin, 2009 p.43) and so offer the opportunity to uncover previously undocumented events and relationships. Yet they are also paradigmatic cases in that they are “cases that

highlight more general characteristics of the societies in question” (Flyvbjerg, 2006 p.232); if certain mechanisms of influence work for automobile corporations in the case studies, they will likely work (or be attempted) in other policy areas with other corporations too.

Research Issues

In the main, the problems experienced during research were primarily associated with access. The first access issue experienced was a failure to translate the research into widely-used policy terms. While, as chapter one explains, oil dependence is an issue of domestic transport, usage of the term in policy circles is highly likely to result in directions to foreign policy or natural resource policymakers. If, however, “transportation policy” or “research policy” were the terms used relevant directions were more likely to be given, particularly when trying to negotiate access through intermediaries.

The second, and more significant, issue was simply getting through to the relevant people. In particular, Congressional staffers proved rather elusive – few responding (to 200+ e-mails) and none agreeing to meet until the last month in Washington D.C. Some useful methods that appeared to work were contacting relevant people who already had a PhD (and so were sympathetic) and, for staffers, attempting to contact people outside of the Congressional working week (Tuesday-Thursday). Other tactics that had mixed results during this research project (although might have greater success in projects that are in less technical policy areas) were attending relevant conferences and, subsequent to the conference, contacting individuals from relevant organisations on the conference mailing lists. The hydrogen case study, in particular, revealed a lot of people who appeared relevant, but were not. Phone calls to organisations also met with mixed success, although calls to Congressional offices began to meet with more success once correct policy terms were used and the Congressional working week was avoided.

The final issue with access that was experienced was lawyer-blocking. In particular, the requirement to sign ethical consent forms (see Appendix A for an example), while seeming to encourage some interviewees as they felt anonymisation was being taken seriously, proved a hindrance on some occasions, particularly with members of the business community. For example, one successful snowball with the

FreedomCAR partnership was abruptly stopped once put into contact with someone from a supermajor oil company who, subsequent to taking advice from his company's legal team, declined to be interviewed because of the ethical requirements.

Beyond issues with access, the research unavoidably has problems with unequal availability of sources and the operation of influence in spaces not open to public scrutiny. Essentially, corporate decision-making occurs in a space not open to the researcher and, as such, has to be imputed from their public words and actions. There is thus a much greater degree of interpretation, and sensitivity to analysis, required when exploring the role of corporations and determining the influence of backroom decisions.

Summary

This chapter outlined and justified the methodological focus of this study and the overall research design: a primarily qualitative and small-*n* case study approach that seeks to understand and explain data holistically and with reference to the analytical framework developed in the previous chapter. This qualitative study examines two cases, utilises three main types of data and analyses the data at three points of policy evolution before linking the cases back to the main research problem and the overarching research questions. Put another way, in an attempt to understand the role of corporations in the persistence of US oil dependence, this study investigates CAFE standards and HFC research policy through the use of elite interviews, documents and statistics, so as to allow analysis of the evolution of policy at the formulation, outcome and implementation stages. Such an approach is divergent from the majority of the interest group literature and so is based upon an iterative-parallel emergent design as it offers the flexibility to respond to, and incorporate, unexpected findings into a wider outlook.

Bibliography

- Agras, J. & Chapman, D. 1999. The Kyoto Protocol, CAFE Standards, and Gasoline Taxes. *Contemporary Economic Policy*, 17, 296-308.
- Benet, R. 2006. *Google Tech Talk - Better Than Ethanol? BTL in Plug-in Hybrid Diesel Vehicles* [Online]. Google Tech Talks. Available: <http://video.google.com/videoplay?docid=363807137347714545#> [Accessed 26/06/2010].

- Blaikie, N. W. H. 2000. *Designing Social Research: The Logic of Anticipation*, Oxford, Polity Press.
- Bromley, S. 2005. The United States and the Control of World Oil. *Government and Opposition*, 40, 225-255.
- Carr, L. 1994. The Strengths and Weaknesses of Quantitative and Qualitative Research. *Journal of Advanced Nursing*, 20, 716-721.
- Creswell, J. W. 2003. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Thousand Oaks, California, SAGE.
- Devine, F. 2002. Qualitative Methods. In: Marsh, D. & Stoker, G. (eds.) *Theory and Methods in Political Science*. Basingstoke: Palgrave Macmillan.
- Dexter, L. 2006. *Elite and Specialized Interviewing*, Colchester, European Consortium for Political Research.
- Easton, G. 2010. Critical Realism in Case Study Research. *Industrial Marketing Management*, 39, 118-128.
- Flyvbjerg, B. 2006. Five misunderstandings about case-study research. *Qualitative Inquiry*, 12, 219-245.
- Gallup, A. & Newport, F. 2007. *The Gallup Poll: Public Opinion 2007*, New York, Rowman & Littlefield.
- Gaventa, J. 2006. Finding the Spaces for Change: A Power Analysis. *IDS bulletin*, 37, 23-33.
- Gerring, J. 2007. *Case Study Research: Principles and Practices*, Cambridge, Cambridge University Press.
- Gilbert, N. 1993. Research, Theory and Method. In: Gilbert, N. (ed.) *Researching Social Life*. London: SAGE.
- Gillham, B. 2000. *Case Study Research Methods*, London, Continuum International
- Greene, D. 1998. Why CAFE Worked. *Energy Policy*, 26, 595-613.
- Guba, E. G. & Lincoln, Y. S. 1989. *Fourth Generation Evaluation*, London, SAGE.
- King, N. & Horrocks, C. 2009. *Interviews in Qualitative Research*, London, SAGE.
- Klare, M. 2008. *Rising Powers, Shrinking Planet*, Oxford, Oneworld.
- Lindblom, C. E. 1977. *Politics and Markets: The World's Political Economic Systems*, New York, Basic Books.
- Mason, J. 2002. *Qualitative Researching*, London, SAGE.
- Moses, J. & Knutsen, T. 2007. *Ways of Knowing: Competing Methodologies in Social and Political Research*, Basingstoke, Palgrave Macmillan.
- Mufson, S. 2006. Talk of Raising Gas Taxes is Just That. *The Washington Post*, 18/10/2006.
- OpenCongress. 2009. *The Vast Majority of Bills Go Nowhere* [Online]. Available: <http://www.opencongress.org/articles/view/1180-The-Vast-Majority-of-Bills-Go-Nowhere> [Accessed 07/07/2010].
- PollingReport.com. 2010. *Energy* [Online]. Available: <http://www.pollingreport.com/energy2.htm> [Accessed 01/06/2010].

- Ragin, C. 1989. *The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies*, Los Angeles, University of California Press.
- Ruddin, L. P. 2006. You Can Generalize Stupid! Social Scientists, Bent Flyvbjerg, and Case Study Methodology. *Qualitative Inquiry*, 12, 797-812.
- Rutledge, I. 2005. *Addicted to Oil: America's Relentless Drive for Energy Security*, London, I.B. Taurus.
- Smith, M. A. 2000. *American Business and Political Power: Public Opinion, Elections, and Democracy*, Chicago, University of Chicago.
- Smith, M. A. 2007. *The Right Talk: How Conservatives Transformed the Great Society into the Economic Society*, New Jersey, Princeton University Press.
- Sterner, T. 2007. Fuel Taxes: An Important Instrument for Climate Policy. *Energy Policy*, 35, 3194-3202.
- Strange, S. 1994. *States and Markets*, London, Pinter Publishers
- Verschuren, P. J. M. 2001. Holism Versus Reductionism in Modern Social Science Research. *Quality and Quantity*, 35, 389-405.
- Verschuren, P. J. M. 2003. Case Study as a Research Strategy: Some Ambiguities and Opportunities. *International Journal of Social Research Methodology: Theory & Practice*, 6, 121-139.
- Weick, K. E. 1979. *The Social Psychology of Organizing*, New York, Random House.
- West, S. & Williams III, R. 2005. The Cost of Reducing Gasoline Consumption. *American Economic Review*, 95, 294-299.
- Wilks, S. 2013. *The Political Power of the Business Corporation*, Cheltenham, Edward Elgar Publishing.
- Yin, R. 2009. *Case Study Research: Design and Methods*, London, SAGE.

Chapter 5 – CAFE: A Tired Debate

“Raising CAFE standards is the single most significant step we could take as a Nation to reduce our dependence on foreign oil, improve our national security, protect our environment and our economy, and assist our consumers.”

Senator Boehlert (R-NY) (Boehlert, 2001 p.8)

Fuel economy standards, which are designed to limit the consumption of fuel by requiring manufacturers to produce more fuel-efficient cars, have been utilised worldwide in order to decrease oil consumption (An and Sauer, 2004). In being designed so that manufacturers are pushed into greater fuel efficiency, fuel economy standards lower the cost of transportation to the country, consumer and environment, although with some costs potentially borne by manufacturers. In this regard, fuel economy standards can form an important part of efforts to create a more sustainable economic system. In the US, the split of the costs of the Corporate Average Fuel Economy (CAFE) standards has resulted in broad public support (as the public see CAFE as a way of increasing fuel economy without paying for it) (Greene, 1998) and manufacturer opposition. So, while US fuel economy standards were the first to be implemented in the world, political deadlock resulting from corporate opposition has meant the standards remained the same, but began to lag behind ever-increasing EU, Japanese and Korea standards (An and Sauer, 2004). Despite the political deadlock and corporate opposition, CAFE remains one of the most perennially-discussed policies to ameliorate US oil dependence (Yacobucci and Bamberger, 2007a).

This chapter will explore corporate opposition to CAFE standards and how their opposition shaped the policy evolution of CAFE under George W. Bush. In order to explore these issues this chapter first details the history of CAFE standards, examining both the original standards and the situation immediately prior to George W. Bush's election. The chapter then moves to exploring the process of reform of the CAFE standards during Bush's Presidency and the role of auto-manufacturers, and the representation of their interests, in this process. In order to fully explore these issues, the second section is subdivided into sections on the formulation of CAFE standards within Congress, the implementation of CAFE standards by the National Highway and Traffic Safety Administration (NHTSA) and, to contextualise the

achievements of policy change, the potential of the new CAFE standards to reduce oil dependence within society. Lastly, this chapter will conclude by drawing together and highlighting the influence of the auto corporations in the formulation, implementation and outcomes of CAFE standards.

Throughout the different sections of this chapter, when working in the interests of the corporations the mechanisms of influence and forms of power highlighted in chapter three are emphasised. So, for example, in Congressional debates the role of politicians who have a large automaker presence in their constituency is accentuated. Investigating the magnitude of these mechanisms helps answer the research questions on the methods used for corporate influence, and the reasons why corporations were influential. Equally, two other important elements receive attention throughout this chapter – the professed interests of the automakers, and the interests and actions of groups opposed to automaker interests – as these two factors are important in helping assess the overarching research question on the extent to which corporations were influential. Exploring these issues in the context of CAFE standards is important as it can be instructive for understanding both the continuation of US oil dependence (and the resultant problems) and Held and McGrew's (2003 p.3) question "Who rules, in whose interests, by what mechanisms and for what purposes?".

History

First introduced in 1975, the purpose of CAFE standards is to increase the fuel efficiency of new automobiles with the long term aim (as old vehicles get replaced by new, which results in the on-the-road fuel efficiency of the national fleet improving) to reduce the consumption of oil by US transportation.³² While such a goal appears relatively uncontroversial (Bamberger, 2002 p.1), CAFE standards have provoked high-profile debates about safety, about consumer choice and about American prosperity – all of which have served to mark CAFE standards as a long-standing and controversial issue. This section will explore the original formulation of CAFE standards, the outcomes of the original CAFE standards and will then explain some of the features of the legislative battleground that surrounds CAFE.

³² Recorded Interview with Congressional Research staffer. Interview took place on 8th April 2011.

The Energy Policy and Conservation Act

By the early 1970s, American society, which had developed in a country with vast indigenous reserves of oil, had become complacent about energy efficiency and wasteful in its use of oil (Kirby, 1995 p.107). As such, in 1974 the US fleet got an average of 12.9 mpg (miles per gallon). By way of comparison, a model year (MY) 2002 Ford Focus gets 30.9 mpg (An and Sauer, 2004 p.19). The US transportation sector, then, was wasteful and inefficient. However, the OPEC oil embargo of 1973-74 dispelled societal complacency about energy efficiency. The embargo brought the fuel efficiency of the American automobile centre stage and resulted in the 1975 Energy Policy and Conservation Act (EPCA), which set the original CAFE standards (Kirby, 1995 p.107). The standards work by requiring vehicle manufacturers to achieve a certain sales-weighted mean of the fuel economies within their product line. The sliding-scale penalty for manufacturer noncompliance was \$5 for every 0.1 mpg below the standard, multiplied by the number of cars the manufacturer sells that year (Bamberger, 2002 p.6). The purpose of the standards was to force technological innovation within the industry.

Under the EPCA automobiles were divided into passenger cars (those with a gross vehicle weight rating of under 6,000lbs) and light trucks (with a gross vehicle weight rating of between 6,000 and 8,500lbs). The purpose of this distinction between passenger cars and light trucks was to ensure that small businesses that primarily used light trucks were not inadvertently penalised (Smart, 2000 p.163). In a further move so as to not penalise businesses, weights above the light truck category were considered to be business-use vehicles and were totally exempt from CAFE.³³ Passenger car CAFE standards were originally set at 18.5 mpg for MY1978 and rose to 27.5 mpg in MY1985, with the Secretary of Transport given the ability to lower the standards to 26 mpg (Crandall, 1992). Any decision to move CAFE standards above or below the 26-27.5 mpg band required the Secretary of Transport to issue an amendment to Congress, which could then be subject to a (possibly unconstitutional³⁴) one-house veto (Fisher, 2005). In a slightly different manner,

³³ Because the main purchasers of heavy goods vehicles are haulage companies – whose main expense is fuel – heavy good vehicles exist in a market that has an incentive to be, and so tends actually to be, more fuel efficient (McKinnon, 1999).

³⁴ As chapter two explained, while a one-house veto exists in legislation and is a potential blocking mechanism that Congress could utilise, in *INS vs Chadha* the Supreme Court declared the use of a one-house veto unconstitutional as it violates the principle of bicameralism and so, if used, is likely to

NHTSA, an executive agency that is part of the Department of Transport, was given the power to reform light truck standards. As part of the EPCA, these light truck standards had to be set by the Secretary of Transport at the “maximum feasible” level, with feasibility determined according to four factors – technological feasibility, economic practicability, effect of other standards on fuel economy and the need of the nation to conserve energy. As such, reforms to passenger car standards can only occur after Congressional action, yet light truck standards can be reformed by executive action – allowing the President to make some reforms to CAFE standards. However, Congress, utilising the power of the purse, can stop the President by restricting NHTSA’s ability to use money to explore raising the CAFE standards, as it did in the 1995-2001 period (detailed below).

One further feature of the EPCA is that it prescribes the method of determining (passenger car) vehicle fuel efficiency. The CAFE test cycle, which measures the fuel consumed over a series of driving procedures, works at higher speeds and with fewer stop-starts than other test cycles around the world. While such a test cycle is perhaps more suited to American driving, with Americans making more use of large less-congested roads, the CAFE test cycle produces better (i.e. higher) mpg ratings than European and Japanese equivalents. So, for comparison’s sake, if standards were set at the same MPG level in the US as in Japan or the EU, US standards would still be lower in reality.³⁵ Finally, the EPCA allows manufacturers to avoid fines by offsetting failures to meet CAFE in some years with accumulated surpluses in the three previous years and expected/planned surpluses in three future years (termed “CAFE credits”).

Outcomes of the Original CAFE and Pre-Bush Attempts to Reform

With oil prices high, CAFE was implemented without revision for the first few model years. Such was its success that automakers even announced achieving a goal of 30 mpg by 1985 (Luger, 2000 p.129). However, the Reagan administration, as part of a wider lessening of regulations, scuttled attempts to further increase CAFE (ibid. p.127). Also, following pressure from GM and Ford who claimed that meeting the

subsequently by struck down. However, the threat of the one-house veto, possibly used as a delaying tactic, remains.

³⁵ For comparisons it is also necessary to ensure that the same form of gallon (UK or US) is being utilised. The UK gallon is larger, and so it produces a higher mpg than the US gallon (more fuel means you can drive more miles).

standards in MY1986 would cause them and the US significant economic damage (Moore, 1991 p.5, Kleit, 1990 p.151), the Reagan administration utilised the Secretary of Transport's power to decrease the standards to 26 mpg. The standards remained at 26 mpg until MY1989/1990, which then saw a stepped return to the 27.5 mpg standard. The Reagan administration's decision to give in to GM and Ford's demands to lower the standards led the Chrysler Chairman, Lee Iacocca, to declare that "We are about to put up a tombstone: 'Here lies America's energy policy'" (PEW, 2012). By 1991, in spite of the actions of the Reagan administrations, the original CAFE standards had been fully implemented and had increased the average on-the-road fuel economy from 11.9 mpg in 1973 to 16.9 mpg in 1991 (Sivak and Tsimhoni, 2009 p.3169). Put another way, efficiency had improved at a compound rate of 2% a year (ibid.). As such, it was estimated that the changes forced by CAFE had saved 55 billion gallons (which equates to 3.5 million barrels per day) of fuel in 1995 alone (Greene, 1998 p.595).

Despite the successes of CAFE throughout the 1980s, the last attempt to increase CAFE standards was met with fierce and, eventually overwhelming, resistance from the automotive industry (Himelfarb and Perotti, 2004 p.386, Luger, 2000 p.167, Lindblom and Woodhouse, 1993 p.87). The Bryan bill, named for Senator Richard Bryan (D-NV), got the furthest of several attempts, with bipartisan support and 33 co-sponsors. The Bryan bill required autocompanies to increase their average fuel economy in 1988 terms by 20% by 1996 and 40% by 2000 – meaning an increase to around 40 mpg for some manufacturers (Moore, 1991 p.5). Furthermore, penalties for violating CAFE would be linked to inflation, instead of continuing at the rate of \$5 per 0.1 mpg as set in the EPCA.

During the debates over the Bryan bill three main anti-CAFE-specific arguments emerged (see, for example, Moore, 1991, Burnett, 2007, Kazman, 2007) that operated alongside more general arguments about regulations, which have maintained an enduring appeal in the political battles over CAFE and have worked to set the agenda of the CAFE debate. These arguments were spread and utilised by the media, think-tanks and policymakers (see Appendix B for an example of a newspaper article that includes all three arguments and is written by someone from a think-tank) and, as such, work as good examples of the hidden power of corporations to set the agenda and disseminate information in an opaque manner.

The first argument concerns “Jevons’ Paradox”. Named after its author, William Stanley Jevons had noticed that improvements in the efficiency of steam engines in 1865 had resulted in their greater use and an increase in the consumption of coal. As such, Jevons’ Paradox is where increases in the efficiency of an action (i.e. a decrease in the necessary energy input per unit of output) directly result in a decrease in the costs associated with the action and, subsequently, result in the action occurring more often (Alcott, 2005 p.11). The paradox, then, occurs when the goal is to reduce the total energy use, as the decrease in costs can lead to an increased demand for a unit of output and thus an overall rise in total energy use (York, 2006 p.143). Proponents of this argument point to the increase of vehicle miles travelled per capita since the introduction of CAFE in the mid-1970s and the subsequent increase in the total amount of gasoline consumed in the US.

The second line of argument drew attention to the safety of CAFE and sought to highlight hidden costs. The argument is that the easiest way to improve the fuel efficiency of a car is to decrease weight, and that a decrease in weight necessarily makes cars less safe. As such, during debates on the Bryan bill, the George H. W. Bush administration started calling the bill the “Highway Fatality Act” and the “National Highway Death Act” (Baron, 1998 p.24). During the Bryan debates, think-tanks pushed the safety argument, with the original standards being estimated by a Harvard University-Brookings Institute study to have been responsible for the death for between 34,900 and 67,300 over 10 years, and the Bryan bill was estimated to cause, if enacted, between 75,000 and 149,000 extra deaths over 10 years (Taylor, 1991).

The argument, in its various formulations, is built around a few basic premises. First, that instead of installing new technology, one of the main (and cheapest) ways in which the automakers complied with CAFE standards was to reduce the weight of cars, which had resulted in a 500lb average reduction in the weight of cars from 1978 to 1988 (Graham, 1992 p.97). Second, based on basic physics, the occupants of lighter cars are more likely to be injured in a crash as they have less mass to protect them and less space to “ride-down” the deceleration (Kazman, 2007). Hence, Bill Lovejoy, a now-former General Motors vice-President, said “When my kids were coming of age, I made sure they had big cars to drive. It’s physics. When a large car meets a small car in an accident, the large car wins” (Rutledge, 2005 p.125). As

such, CAFE, by encouraging the purchase of lighter, and therefore less-safe, vehicles, is responsible for additional road deaths than would have been the case if CAFE was not implemented (Evans, 2002).

The third argument is that the current market situation is representative of consumer choice and thus in, some ways, democratic. Americans, it is argued, want large cars and Sports Utility Vehicles (SUVs) with high-performance attributes, as evidenced by their purchase of them. CAFE, which favours smaller, more fuel-efficient cars, gets characterised as Washington “force-feeding” smaller cars on an “unwilling marketplace” (Peters, 2007). Following this line of argument, no regulation is needed because if consumers wanted higher-MPG cars then they would purchase them and that the marketplace would solve the issue on its own (Coalition for Vehicle Choice, 2001a). This argument is a specific use of the invisible power “choice argument”, with the marketplace seen as so responsive to the needs of consumers that they can control new vehicle attributes. There is also a normative element present, with the idea that not only can the market improve overall fuel economy, but that the market should be left to do so.

All three of these arguments were (and still are) highly influential within debates about CAFE standards, and have been widely repeated in the media and by think-tanks (e.g. Coon, 2001, *The Washington Times*, 2012, Pfothenauer, 2002). However, beyond the limited empirical evidence supporting these theoretical arguments (Greene, 1998 p.595), there are well-known objections to all of these arguments, which while well-known, have failed to undermine these arguments or stop their continued deployment in political/policy environments. With regards to Jevons' Paradox, vehicle technology and the role of cars in society is much more mature compared to trains in the industrial revolution in that the average American already travels a significant number of miles in a day. This maturity of use means that most needs are already met by existing travel and, therefore, that there is decreasing utility in travelling further vehicle miles; there are only so many miles a person needs, or is willing, to drive, regardless of cost. CAFE, then, does not fall under Jevons' Paradox as a decrease in the cost of driving caused by increased efficiency is unlikely to substantially increase driving.

While Jevons' Paradox does not apply to CAFE, the logic underlying the paradox – that a decrease in cost of a service incentivises increased usage – does. As such,

there is a well-established literature on the “rebound” effect that directly undermines the repetition of Jevons’ Paradox in the case of CAFE standards. The rebound effect is the increase of use of energy as the result of efficiency gains bringing down costs but, in a crucial departure from Jevons’ Paradox, does not necessarily result in greater total consumption (i.e. the increase (or “takeback”) caused by efficiency improvements does not necessarily outweigh the total reduction). Thus, the rebound effect represents a reduction – estimated to be around 5-20% (Small and Van Dender, 2007) – of the savings that CAFE would have made without its effect, but does not mean that CAFE increased oil consumption overall.

There are four problems with the argument about CAFE, downweighting and safety that suggest the argument is an attempt to alter the agenda of the CAFE debate. The first is that the argument is fundamentally based upon the perspective of the person inside the car and not the traffic system as a whole. In a collision larger cars, following exactly the same logic as the argument’s proponents use, are more likely to kill those outside of the vehicle due to their greater mass (Ballesteros et al., 2004). Thus, downweighting may decrease safety for car users, but increase safety for others (pedestrians, motorcyclists, light car drivers) on roads. Second, the argument ignores issues of engineering on several counts. Lighter materials are not necessarily weaker (e.g. aluminium compared to steel) and cars are not all equal in their safety features (the addition of collapsible steering columns, reinforced roll cages and airbags all increase safety, for instance) or in their safety design. In fact, larger cars, such as SUVs, are at a substantially greater risk of other potential safety problems. For instance, an SUV’s four-wheel drive gives the vehicle greater traction, and thus greater acceleration and the appearance of greater control, in slippery conditions. Yet, due to the greater weight of SUVs, the vehicles have longer stopping distances meaning that (as a US auto executive put it) “many [SUV drivers] end up in a ditch” (Bradsher, 2004 p.131). Most notably, SUVs are at a far greater risk of rolling over when cornering at high speeds, which is common and is the type of accident that has the greatest proportion of fatalities – rendering the feeling of safety in an SUV “illusionary” (Gunster, 2005, Vanderheiden, 2006 p.30). Third, building on the previous points, SUV occupants die slightly more often in accidents than car occupants and are three times more likely to kill other drivers (Bradsher, 2004 p.459). Fourth, the provenance of the CAFE safety argument is highly questionable, with

corporately-funded think-tanks using this argument in their “vitriolic attack[s]” on CAFE standards (Rutledge, 2005 p.125) and having been instrumental in its creation. In particular, the Competitive Enterprise Institute (CEI), a think-tank whose major funders include GM, the Alliance of Auto Manufacturers and Ford (CEI, 1998, Achenbach, 2006), was instrumental in developing and pushing the argument. As a 1994 proposal from the CEI to the tobacco company Phillip Morris³⁶ states

“CEI entered the CAFE debate in 1986, recognizing that economic arguments alone were failing to win the policy debate. CEI raised the argument that CAFE costs not only dollars but lives as well, because it restricts the production of larger more crashworthy cars.” (CEI, 1994 p.2).

The CEI persuaded Robert Crandall, an economist at the Brookings Institute, to research the issues (ibid.). In turn, Crandall persuaded John Graham, a professor of Public Health at Harvard University, to co-author the Harvard-Brookings paper mentioned previously. Professor Graham, incidentally, would later set up the Harvard Centre for Risk Analysis and be appointed as George W. Bush’s administrator for Office of Information and Regulatory Affairs.³⁷

Announced by the CEI even prior to its actual publication (Bovee, 1988), the Journal of Law and Economics published “The Effect of Fuel Economy Standards on Automobile Safety” in 1989. The majority of this paper concerns a quantitative modelling of the impact of CAFE standards on vehicle weight; finding that, according to their model, the average weight of a MY1989 vehicle would be 500lbs less than it would have been in an unregulated market without CAFE. This 500lbs reduction, after being plugged in to the calculations of General Motors’ Leonard Evans (1984), is said to produce ‘a 14 per cent increase in occupant fatality risk in 1989 cars’ (Crandall and Graham, 1989 p.111). However, because this increase occurred within

³⁶ The confidential document was released in line with the 1998 Master Settlement Agreement with tobacco companies.

³⁷ While in the process of being appointed administrator for Office of Information and Regulatory Affairs, Professor Graham faced severe criticism from many quarters (Public Citizen, 2001a). One letter from 53 academics opposing his appointment (Public Citizen, 2001b) argued that ‘Graham’s work has, overall, demonstrated a remarkable congruency with the interests of regulated industries...We also have serious concerns about Professor Graham’s disregard for widely-accepted fundraising and research norms within academia. He has solicited and accepted unrestricted funds from corporations with a direct financial interest in particular regulatory issues addressed by his work, without acknowledging the role of his corporate benefactors. Unlike many research scientists, he has often operated without the guidance of restricted-funding contracts designed to minimize conflicts of interest and to protect credibility and public trust.’

the context of greater vehicle safety overall and a reduction of traffic fatalities since the introduction of CAFE they argue that the reduction in fatalities 'might have been more dramatic had CAFE not been in effect' (ibid. p.113). Overall, they conclude, 'we estimate that these 1989 model year cars will be responsible for 2,200-3,900 additional fatalities over the next ten years because of CAFE' (ibid. p.118).

Central claims of the Crandall-Graham paper, such as "analysts have shown that the "downsized" vehicles of the late 1970s and early 1980s are less safe in crashes than the heavier cars they replaced" (1989 p.100), are referenced using other studies that were funded by industry players (in this case, the single reference for the above quote leads to a conference presentation by two people from the Insurance Industry for Highway Safety, which is funded by the US auto insurance industry (Insurance Institute for Highway Safety, 2013)). The CEI proposal goes on to state that

"As the only peer-reviewed study on CAFE's safety effects, the Crandall-Graham study came to play a major role [in the] policy debate" (CEI, 1994 p.2).

The creation of "academic" research supporting the safety argument has not only affected the policy debate but also subsequent academic research, with GoogleScholar putting the citations of the Crandall-Graham paper at 172. This influence on both the policy and academic debates has also been bolstered by others, most notably the former GM engineer and CEI consultant Leonard Evans³⁸ – who Public Citizen (a Ralph Nader Organisation) described as an "industry apologist" (Public Citizen, 2005). As such, noting the dubious provenance of the argument, one interviewee³⁹ said the argument "is not really credible" and that "there are certain vested interests – AAM [Alliance of Automobile Manufacturers] is one – who sees this as a potential argument to slow down the CAFE standards."

Equally, there are many problems with the consumer choice of larger cars argument. As was discussed in chapter three, while consumer choice obviously plays a role in the market, it is not the only determinant of the market and, therefore, it cannot be imputed that consumer market choice represents consumer preferences – that consumers have "voted" freely and fairly for SUVs. The auto corporations, seeking

³⁸ Tied very heavily into the invisible power sound science discourse, Leonard Evans set up the group "Science Serving Society", which campaigns against CAFE standards and "for" vehicle safety.

<http://www.scienceservingsociety.com/>

³⁹ Recorded Interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April 2011.

the higher profits that SUVs could bring, actively worked to change the market and started producing SUVs in order to appeal to the upwardly-mobile, “yuppie” consumers of the Reagan era (Gartman, 1994 pp.222-224). In order to promote these vehicles they used a number of tactics to incentivise consumers to purchase SUVs, not least advertising (Davis and Truett, 2000 p.21). Such advertising brought in ideas of “no boundaries” (ibid. p.21) and freedom for the driver, and cost automakers and auto dealerships \$9 billion in the 1990-2001 period (Gunster, 2005 p.8). As John Hall (D-NY) observed, the car industry spent millions to “advertise such ridiculous things as driving an SUV up to the top of a mountain and playing Frisbee across to another mountaintop, and then showing that this four-wheeler could do that and advertising power...power and speed.” (Hall, 2008 p.10).

With the auto corporations pushing these ideas of safety, power and speed, it is not surprising that consumers increasingly desired SUVs. In fact, SUVs grew from constituting 7% of total vehicle sales in 1990 to 19% in 1999 (Davis and Truett, 2000 p.2). While automaker actions undoubtedly helped establish SUV sales, over the longer term, the presence of SUVs on the road also normalised the choice of an SUV and lessened the requirement for active manipulation on behalf of auto corporations; corporate pressure transformed into social pressure and widespread social beliefs about desirable attributes and the SUV’s representation of these attributes. As such, as the GM Styling Vice President from 1958-1977, Bill Mitchell, said, the consumer choice argument does not work as “the truth of the matter is that most consumers don’t know what they want...The idea of the industry as an obedient servant to the public is bull” (as quoted in Gartman, 1994 p.214).

Therefore, each of these common arguments suffer severe weaknesses. Yet, despite these weaknesses, these arguments have been widely deployed by think-tanks and other groups. In particular, and actually during the debates over the Bryan bill, the Coalition for Vehicle Choice (CVC) emerged, which fought vigorously against the Bryan Bill using these arguments and was headed by the NHTSA Administrator from 1983-1989, Diane Steed (Rowell, 1996 pp.84-85). One advert for the CVC saw a larger car crushing a smaller car with a voice-over intoning “while smaller cars may save you gas, they could cost you something far more precious” (Casper, 2000 p.99). While claiming to be a broad-based coalition that represents millions of people, CVC was set up by the PR firm E. Bruce Harrison on a \$500,000 grant from the major

autocompanies and the National Auto Dealers Association; it was an astroturf group representing industry interests (Beder, 1998 p.22, Rowell, 1996 p.84).

Because of such corporate pressure, and despite all of the anti-CAFE arguments suffering from major flaws, these three arguments were instrumental in defeating the Bryan bill and defining the subsequent terms of the CAFE debate. When Clinton came to power he sought to improve fuel economy, but sought to do so while on friendly terms with the auto industry. His solution was to offer a moratorium on fuel economy issues and a public-private partnership, the Partnership for a New Generation of Vehicles (PNGV), that could advance technology so to produce super-fuel-efficient vehicles (Luger, 2000 p.175). To get industry on board, Clinton also offered them advanced access, resulting in one case of the auto industry vetoing 14 candidates for the role of Administrator of NHTSA because they were considered too close to the consumer movement (ibid. p.176).

One further element that became apparent from the pre-Bush debates on CAFE standards is that there was a general partisan divide over the issue of CAFE standards, with Republicans generally opposed and Democrats generally supportive. As such, when the Republican held majorities in both houses following 1995, the Department of Transport (DOT) budgets came with a rider specifically prohibiting NHTSA spending funds on research for raising the standards, thereby pre-empting any further administration attempts to increase light truck CAFE standards with existing powers and halting the 0.6 mpg upwards creep in light truck standards since 1990 (NHTSA, 2002a p.77016). In general, this partisan divide can be understood as part of wider party political ideologies, with many Republicans opposed to economic regulations in principle.

Specifically, however, the partisan divide can be understood as willingness on the side of Republicans to adopt tactics urged by conservative think-tanks and to give in to the demands of industry, both points which can be seen in the decision to adopt the budget rider. With regards to think-tanks, the Heritage foundation, in a 1995 report⁴⁰, had urged members to use more budget riders (specifically mentioning CAFE standards) so as to “encourage federal agencies to act more responsibly in

⁴⁰ The report contains the lines “Terminating the CAFE program would save thousands of lives. According to economists Robert Crandall of the Brookings Institution and John Graham of the Harvard School of Public Health...”

setting and enforcing regulations” and to “encourage the Clinton administration to work more assiduously with Congress” (Shanahan and Wilson, 1995). Likewise, reflecting industry pressure, Andrew Card, CEO of the Alliance of Automobile Manufacturers, said that “in view of the very substantial manufacturer, job, consumer and competitive impacts of this law, we urge Congress to approve legislation that will effectively freeze further CAFE rulemaking” (Card, 1995): the automakers, then, were pushing for the budget rider.

While there was a continued legislative battle over the standards, substantial changes were occurring outside of the policy arena. As mentioned above, during the 1980s and the 1990s manufacturers had started pushing SUVs. These blurred the boundary established in the EPCA between passenger cars and light trucks by bolting a passenger vehicle interior onto a light truck chassis; the automakers had created a light-truck passenger vehicle. This tactic meant that private-transportation use vehicles were subject to efficiency standards meant for small businesses. As such, the Union of Concerned Scientists described it as a “loophole” that has “steadily eroded or undermined the baseline for CAFE standards” (Byrne, 2003 p.2). What occurred, then, was the transformation of the political terrain by the visible-power marketplace decisions of the auto corporations while policy making was at a standstill.

SUVs were heavily promoted by the industry because they had large profit margins (15-20% of sale price) that offset their low profit (3% or less), or even loss-leading, smaller cars (Crotty, 2000 p.368, Rutledge, 2005 p.122, Gunster, 2005 p.8). For example, Ford’s Lincoln Navigator, with all its optional extras, is said to have produced \$15,000 profit per vehicle in 2000 (Dunn, 2006 p.209). Seeking these profits, automakers expended significant effort pushing the “cultural buttons” – particularly safety – of affluent American families and worked to associate SUVs with glamour and power (Amin and Thrift, 2004 p.xiii). The consequence of this automaker-encouraged-shift was that the number of SUVs rapidly increased, with sales rising from 200,000 a year in 1975 to 3 million a year in 1999 (Smart, 2000, Greene, 1998 p.601) and there was also an increase in non-CAFE 8,500lb+ passenger vehicles. The result of this shift towards SUVs is that, after continual increases since CAFE was introduced, the on-road efficiency of the US fleet began to decline as lower mpg SUVs displaced passenger cars for personal transportation

needs. It also saw the major US auto manufacturers become dangerously reliant upon the continued sale of SUVs for their financial health (Repetto, 2006 p.18), which would become devastating for the companies in the late 2000s due to the increasing price of oil and the financial crisis.

CAFE during the Bush Years

"Congress is debating some other ideas. And one idea is to give me a capacity to raise CAFE standards on automobiles. I encourage them to give me that authority...and I intend to use it wisely if Congress would give me that authority."

George W. Bush, 27th April 2006 (Whitehouse.gov, 2006)

Short Chronology

2001: Congress requests the National Academy of Sciences (NAS) to conduct a review of the feasibility of raising and reforming CAFE standards

2001: The National Energy Policy report directs the Secretary of Transport to review CAFE, with due consideration to the forthcoming NAS study

2002: Secretary of Transport Mineta sends two letters asking Congress for the ability to reform passenger car standards

2003: NHTSA issues new light truck standards for MY2005-2007.

2005: Energy Policy Act 2005 excludes mention of CAFE

2007: Bush announces "20 in 10" Policy

2007: *Massachusetts vs Environmental Protection Agency and Center for Biological Diversity v. National Highway Traffic Safety Administration* rulings

2007: Energy Independence and Security Act (EISA) passes, mandates CAFE increases and reform

2008: NHTSA rulemaking on the basis of EISA 2007 delayed due to bankruptcy of GM and Chrysler

2009: Bush leaves office without finalising new CAFE standards

Formulation

With oil prices low, and with CAFE having been in a state of virtual deadlock for the

past decade, there appeared little chance of reform following George W. Bush's ascent to power in 2001; particularly as Bush decided to appoint the former CEO of the American Automobile Manufacturers Association and a former GM Vice President, Andrew Card, as his Chief of Staff. The chance of reform was further lessened by the major US auto-manufacturers maintaining their long-standing opposition to CAFE standards, with Ford favouring "market based initiatives" because CAFE was "ineffective" (Ford, 2003), and the President of the Alliance of Automobile Manufacturers, Josephine Cooper, declaring in 2003 that a proposal to modestly increase CAFE standards "threatens jobs, the economy and family vehicles" (Byrne, 2003 p.2). A GM Vice-President, Thomas Davis (2001), set out the position of his company using many of the arguments detailed in the section above:

"Any reform of CAFE would have to address the significant adverse consequences of the current system, including the disparate impact on domestic [and] foreign automakers...the adverse impact on driver and passenger safety; the opposition to natural market forces; the negative impact on the consumer's choice of vehicle; the encouragement to increase driving by reduced mile per gallon costs...CAFE cannot be fixed by simply a simple shift in the formula. CAFE is determined primarily by what people choose to buy, and that choice reflects consumer needs."

Despite these arguments, increasing concerns about environmental damage, decreasing total fuel economy and import reliance meant that potential reforms to CAFE standards (Kerry, 2001 pp.2-4), which had been off the table because of Congressional budget riders since 1995, returned to the political arena. Both in (the marginally-Republican) Congress and in the executive there were moves to increase CAFE standards using both existing powers and through passing new legislation. In Congress, following a request from Secretary of Transport Norman Mineta⁴¹ (NHTSA, 2002b p.16868) and pressure from the Senate the DOT budget rider that stopped NHTSA assessing light truck standards was not included in the 2001 budget. One of the concessions given to secure the end of the budget rider was a Congressional request that the National Academy of Sciences (NAS), alongside the DOT, "recommend, but not to promulgate" new CAFE standards in a report that had to

⁴¹ Norman Mineta was the only member of the Democratic Party to be a part of either of Bush's cabinets.

consider the effects of CAFE on “vehicle safety and on effects on employment in the automotive sector and to analyze potentially disparate effects of revised standards across the sector” (Bamberger, 2002). While the mood towards CAFE reform was brightening, Congress was still not willing to increase CAFE standards at the time, with a McCain-Kerry amendment to increase CAFE rejected in the Senate (Dunn, 2006 p.199).

During Congressional debates on the McCain-Kerry amendment, opponents of CAFE claimed it would increase fatalities by the thousands and would restrict consumer choice, meaning they couldn’t get the vehicles – SUVs – that allow them to enjoy their lives. For instance, in proposing an alternative amendment opposed to CAFE, Senator Bond (R–MO) described it as

“a commonsense amendment to the energy bill that will protect jobs, safety, consumer choice, and continue to pursue reasonable, scientifically achievable environmental improvements. I know that some in this Chamber believe our fellow Americans cannot be trusted to make the right choice when purchasing a vehicle...but I do not pretend to know what is best for each of the 16 million Americans who purchase a new vehicle every year” (Bond, 2003 p.S9891).

These arguments were supported by advertising campaigns, with the Coalition for Vehicle Choice urging New Hampshire voters to contact their Senator to protect “the endangered SUV and pickup” (Coalition for Vehicle Choice, 2001b). Similarly, an advert sponsored by the US Chamber of Commerce and the National Automobile Dealers Association shows ‘a forlorn looking man next to an SUV, a canoe strapped to the roof and two small girls sitting on the hood. ‘We work hard all year so our family can go fishing and camping together,’ the ad says, ‘We couldn’t do it without our SUV’ (Lancaster, 2002).

Alongside Secretary Mineta’s request, the executive commissioned the National Energy Policy Development Group (NEPDG) – headed by Vice President Cheney (leading to its nickname the “Cheney Report”) – to report on a comprehensive National Energy Policy. Among other recommendations, this report endorsed raising CAFE standards. However, the Cheney report stressed that CAFE standards should ensure they work without “negatively impacting the U.S. automotive industry” (National Energy Policy Development Group, 2001 p.68). It also required standards

be set with due consideration to the then-forthcoming NAS/DOT report and that they should be set “analytically and based on sound science” (ibid. p.68) – a point which was repeatedly emphasised by policymakers, agency officials⁴² and corporate spokesmen, most notably in Secretary Mineta’s request to Congress.

The Cheney report came under significant attack due to the opaque formulation of its recommendations and the role of different groups in influencing its contents. A Government Accountability Office (GAO) report on the Cheney report described its creation as “centralised” and “top-down” (Government Accountability Office, 2003 p.4) and mentioned that, from the documents they could obtain through court order, that several industry groups – including General Motors, the Alliance of Automobile Manufacturers and fossil fuel producers (ibid. p.15-16) – had numerous meetings with the NEPDG, whereas academic experts, policy organizations, environmental advocacy groups, and private citizens were contacted “to a more limited degree” (ibid. p.5). The GAO report was, however, unable to determine the extent of the influence of the groups met due to the “unwillingness” (ibid. p.5) of the Vice President to release specific information about the NEPDG’s workings, which entailed that the GAO’s analysis did not meet “generally accepted government auditing standards” (ibid. p.3). Regardless of the problems with the creation of the Cheney report, its, and Congress’, recommendation meant that the 2002 NAS⁴³ study was pushed as central to the Bush-era debate on CAFE standards. The report was the foundation of “science-informed” political debate on CAFE standards during the Bush period, and was subsequently used by NHTSA in their analysis during the implementation stage.

One of the most politically-utilised parts of the NAS study⁴⁴ was the conclusion that CAFE “probably resulted in an additional 1,300 to 2,600 traffic fatalities in 1993” (National Academy of Sciences, 2002 p.28). However, all 12 members of the NAS research group were not in agreement and two members (David Greene (a National

⁴² “Sound science” was a major theme during a recorded interview with a senior NHTSA staffer, 4th May 2011. A media handler was present for this interview.

⁴³ The National Academy of Sciences uses a broad definition of science, with the 2002 CAFE report being authored (as classed by subject in highest level of education) by 3 economists, 2 chemists, 1 political scientist, 5 engineers and 1 psychologist.

⁴⁴ For instance, Senator Domenici (R-NM)(2003, p.S9889) said that “I believe that the NAS report offers us in the Senate clear guidance and expert scientific analysis as we debate fuel economy standards. CAFE standards which cannot be met by technological improvement have killed roughly 2,000 people a year—that is almost as many as in the tragedy of September 11—because of what we in Congress have mandated. That is a frightening number.”

research labs engineer who was responsible for a number of academic works on similar topics, e.g. Greene, 1998, Greene and Tishchishyna, 2000, Greene, 2005) and Maryann Keller, who worked in automotive finance) produced a minority opinion specifically concerning the safety implications of CAFE, arguing (National Academy of Sciences, 2002 p.117) that

“The relationship between fuel economy and highway safety is complex, ambiguous, poorly understood, and not measurable by any known means at the present time. Improving fuel economy could be marginally harmful, beneficial, or have no impact on highway safety. The conclusions of the majority of the committee...are overly simplistic and at least partially incorrect.”

The minority opinion reflected research that had been conducted since a 1992 NAS report, that the majority opinion had “relied heavily on” (ibid. p.24). The minority opinion also chimed with a GAO report that had been released in 2000, but which was left out of Congress, the NAS, and the executive’s consideration of “science” with regards to CAFE. This GAO report (Government Accountability Office, 2000 p.5) did not dispute that there was some relationship between weight and safety. However it did take issue with down-weighting’s relationship to CAFE standards, stating that

“The effect of increasing CAFE standards on vehicle safety is hard to quantify as it depends on many variables, such as the amount of lead time given to manufacturers, the size of the CAFE increase, and the strategies manufacturers use to achieve fuel economy gains. In addition, there is little current research linking CAFE increases and vehicle safety.”

Besides the safety argument, there were a number of findings of the 2002 NAS report that laid the groundwork for CAFE policy under Bush. The report found that the potential fuel efficiency gains from improved technology have, since 1985, been used by manufacturers to increase performance (because consumers “clearly favour” these attributes (National Academy of Sciences, 2002 p.111)) and that the current state of technology was sufficient to substantially reduce fuel consumption in the 15 years following 2002. As such, the NAS report recommended (ibid. ch.6) that CAFE is raised, but is also reformed in line with safety concerns (ibid. p.114) so that the distinction between light truck and passenger car is changed to a sliding attribute-

based standard. That is to say, the distinction would be changed to a scale that works on a gradient based upon a certain vehicle characteristic “such as vehicle weight” (ibid. p.114)(i.e. if weight was the attribute, heavier cars would need to have a lower mpg than lighter cars, regardless of class). The study (ibid. p.69) also notes that the 2001/2002 auto market was a “difficult environment for GM, Ford [and Chrysler]” and, as it would make it easier for these companies to comply with new standards, trading of CAFE credits between manufacturers should be allowed – which would also give the manufacturers greater ability to specialise in the production of certain vehicle classes while fuel economy increases overall.

The NAS report, which was under a five month rush to release a July 2001 pre-publication copy (ibid. p.1), was, like the Cheney report, informed by a disproportionate number of meetings with the automakers. The Sierra Club, the Centre for Auto Safety (a Ralph Nader organisation), the Union of Concerned Scientists, and the Natural Resource Defence Council all had a representative at one of the two larger open meetings that helped create and craft the report (ibid. pp.128-129). In contrast, ten representatives of the auto industry (and one from National Auto Dealers Association) were present in these larger meetings and there were seven further meetings (out of a total of eighteen) specifically with the auto-manufacturers (ibid.). Furthermore, also present at the larger meetings were “industry apologist” Leonard Evans, CEI’s Sam Kazman and several representatives from the Coalition for Vehicle Choice (ibid.). So, not only were the automakers given great access due to their privileged position, but so too were groups funded by the auto industry and representing industry interests. Considering the balance of industry and interest group representation, it is perhaps unsurprising that the Alliance of Automobile Manufacturers noted that the NAS study “confirms the automobile industry’s view of CAFE” (Alliance of Automobile Manufacturers, 2001). Thus, the production of the NAS study represents the convergence of visible (the direct inclusion of the companies), hidden (in the inclusion of astroturf groups and of think-tank-inspired research) and invisible power (use of the consumer choice and sound science discourses) in a manner that further enhanced their power by ensuring their science was viewed as sound and accepted.

Yet, in spite of the NAS report’s recommendations of raising CAFE standards, support within Congress for making alterations to the EPCA framework for CAFE

standards, including giving the administration greater powers to reform the standards itself, was lukewarm; with the exception of NHTSA's 2003 light truck rulemaking (which utilised administrative powers already existing from the EPCA⁴⁵) progress on CAFE was stunted within this period. The NAS report's conclusions about safety were utilised as part of the fight against CAFE reforms, with Senator Levin (D-MI) saying

"The National Academy of Sciences said – not the American auto industry, not the insurance industry but the National Academy of Sciences – there would have been between 1,300 and 2,600 fewer crash deaths in 1993 had the average weight and size of the light-duty motor vehicle fleet in that year been that of the mid-1970s" (Levin, 2002 p.S1749)

As such, in the debates leading up to the 2005 Energy Policy Act provisions to increase and reform CAFE were rejected and the final bill did not change CAFE at all, although it did increase funds to NHTSA to carry out a feasibility report of a reduction in fuel consumption (Yacobucci and Bamberger, 2007a p.2).

In part, the opposition to CAFE reform within Congress was due to the partisan divide on the issue and the Republican control over Congress. However, there was also a regional basis to opposing CAFE standards as corporate visible power held sway. Congressmen, particularly Representatives, with auto plants in their districts were much more receptive to auto industry positions and more likely to push for the protection of, and directly represent, auto industry interests (Dunn, 2006 p.225). For example, Rep. Candice Miller (R-MI) said in a Hearing before the Select Committee on Energy Independence and Global Warming that

"I principally sought a seat on this committee because I wanted to be a very strong advocate for the domestic auto industry, obviously, in full disclosure, being from Michigan" (Miller, 2008 p.9).

Likewise, in a 2005 hearing on the issue of CAFE Standards, Rep. Russ Carnahan (D-MO) said that "Chrysler is an important employer to our region" and that "I urge everyone to pay particular attention to balancing the increase of CAFE standards

⁴⁵ The 2003 light truck rulemaking, while not desired by the automakers, was sufficiently modest that it did not face significant opposition within Congress. As the House Majority whip, and leader of the 1996-2001 CAFE opposition, Rep. Tom Delay (R-TX) said about new light truck standards "I'm not going to fall on my sword on this issue" (Eilperin, 2001).

while keeping our American auto companies strong and viable.” (Carnahan, 2005 p.15)

This representation of auto interests, as the Rep. Miller and Rep. Carnahan quotes show, is not clandestine and can involve actively seeking membership of important committees with regards to auto interests/regulation. In fact, Rep. John Dingell (D-MI), who is both the longest-serving member of the House and was ranking member within (and from 2007-2009 Chairman of) the House Energy and Commerce Committee, has been widely recognised as protecting the auto industry since being elected to office in 1955 and has been seen to do so very effectively (Luger, 2000 pp.160-161). Perhaps unsurprisingly, both Ford and GM were leading contributors to his 2004 election campaign (Center for Responsive Politics, 2011). As such, Thomas Friedman (2008), writing at the time of the auto bailouts, wrote that

“when they do have to bury Detroit, I hope that all the current and past representatives and senators from Michigan have to serve as pallbearers. And no one has earned the “honor” of chief pallbearer more than the Michigan Representative John Dingell... who is more responsible for protecting Detroit to death than any single legislator.”

Likewise, Dingell was listed as number one in an Automotive News 10-person list of Congressmen who were recognised as consistent supporters of auto interests (Automotive News, 2007).

This particular avenue of influence is quite extensive. The Congressional Auto Caucus was formed in 1983 “to exhibit a unified voice for American auto manufacturers and their employees” (Kildee, 2011) and, as of 2009, has 37 Representatives – 19 of whom are Republican and 18 Democrats – from 18 states. While most of the Representatives are from Rust Belt states with a large number of manufacturing jobs, the link between auto plant location and membership of the caucus can be seen most clearly in Rep. Lee Terry’s (R-NE) membership. The two other Nebraskan Representatives, who have massive rural districts and do not have auto plants in their districts, are not members of the auto caucus, whereas Terry’s Nebraska district is urban and contains a Ford manufacturing plant. The purpose of this caucus is to speak with a collective voice that will “repeat that what’s good for the American auto industry is good for our country” (ibid.). Likewise, the Senate,

which only has around 25 caucuses in comparison to the House's 200+ (Master, 2007), has its own Auto Caucus that brings together Senators from auto producing states – with Senator George Voinovich (R-OH) and Senator Carl Levin (D-MI) chairing the caucus during the Bush period (Levin, 2008). Seeing the interests of their constituents and the interests of the employing corporation as one and the same, these politicians give the corporations a great deal of access, communicating with them and working to represent their interests.

The combination of regional auto representation and the partisan divide on the issue meant that reformers at the federal level were not well placed to change CAFE standards because Congress could, and did, stop any changes. However, in California a head of steam was gathering (Dunn, 2006 p.215). California was in a prime position to push for change as it was the only state in the 1990 Clean Air Act that was given the power, subject to EPA approval, to set regulations regarding auto emissions, with other states given the choice of either following federal regulations or of adopting California's regulations (Vogel, 1997 p.259). It also did not have significant automotive employment, and so did not have to cope with the industry-constituent job link. In 2003, California passed AB 1493, which required the California Air Resources Board (CARB) to promulgate new regulations for a range of automobile emissions including, crucially, CO₂, which had not previously been subject to Clean Air regulations (Carlson, 2009 p.1109). Because CO₂ emissions and fuel economy are linked (ibid. p.1127) California was, in effect, setting higher fuel economy requirements. An and Sauer (2004 p.27) calculate that CARB's regulations were equivalent to a 35.6 mpg by 2016 fuel economy standard.

Likewise, state pressure was being exerted through the courts. The Clean Air Act had empowered the Administrator of the EPA to regulate any air pollutant that he determined to be detrimental to public health or welfare. In 2003, the EPA had decided that its authority under the Clean Air Act was insufficiently clear to regulate on CO₂ or climate change and that, regardless of authority, the EPA was the wrong body to regulate on such a matter. However, in an effort to force the EPA to regulate CO₂ emissions, several states, cities and organisations sued the EPA in *Massachusetts vs Environmental Protection Agency*. The Supreme Court found in favour of Massachusetts in 2007 ruling that the EPA had both the authority and the legal duty to regulate CO₂ emissions. In effect, then, the executive was required to

issue standards that regulated automobile CO₂ emissions and, thus, to set fuel economy standards. The *Massachusetts* decision also had the knock-on effect of strengthening California's attempts to regulate CO₂ emissions under the Clean Air Act by establishing precedent and by undermining the basis of the lawsuits that had been launched by the auto-manufacturers to stop California's regulations (Doniger, 2007 p.77).

As such, there was significant pressure building within the US political system that worked against many forms of corporate power. This pressure was further intensified and broadened by continually rising oil prices. Hence, in his 2007 State of the Union address, President Bush outlined his twenty-in-ten plan, which aimed to reduce the (predicted future) national oil consumption by 20% over ten years through the production of 35 billion gallons of renewable fuels per year⁴⁶ to replace gasoline usage and a 8.5 billion gallon a year (550,000 barrels per day) reduction in oil consumption through increased CAFE standards (Bush, 2007a), which was estimated to be equivalent to an annual 4% increase in the CAFE standards (Yacobucci and Bamberger, 2007b p.5). President Bush also requested that the authority "be provided to set the CAFE standards, based on *cost/benefit analysis*, using *sound science*, and *without impacting safety*" (Bush, 2007b [emphasis added]). Thus, while pressure was building that worked against corporate interests, the corporations were still significantly empowered by their hidden and invisible power.

In the 2007 elections, Democrats won a majority in both houses for the first time since 1995 and the debate on CAFE reform reopened in both House and Senate. During the many debates, Michigan members of Congress promoted the "American Manufacturing Initiative". Reflecting the pro-CAFE pressures in the system, this proposal did call for new CAFE regulations, but also called for a slew of tax credits, automobile company supports (including help with autoworker "legacy" costs) and technology goals. In fact, the technology goals were seen as rendering CAFE redundant as the American Manufacturing Initiative would have seen CAFE requirements waived if, by 2020, the automakers only sold new vehicles

"that 1) utilize advanced technology (such as hybrid, clean diesel, or fuel cells) or alternative fuel; or 2) utilize an internal combustion engine that achieves at

⁴⁶ Ethanol and other alcohol-based renewable fuels have lower energy density than gasoline. As such, 35 billion gallons of renewable fuels replaces around 23 billion gallons of oil, or 1.5 million bpd.

least 35 miles per gallon” (Levin, 2007a).

Also, like with the Bryan Bill before it, CAFE standard proposals were subject to intense lobbying by the auto companies in this period. During 2007, GM spent \$14.2 million (Center for Responsive Politics, 2007a) and Ford \$7.1 million (Center for Responsive Politics, 2007b) on lobbying in the US. A number of the lobbyists hired with this money had previously worked as staffers for still-standing US Congressmen and women; they had been through the revolving door. For example, GM hired the Duberstein Group to lobby on CAFE issues, who then utilised Eric Ueland, a 20-year Congressional staffer and former Chief of Staff to the then Senate Majority Leader, Bill Frist (R-TN), to lobby (Office of Public Records, 2007a). Likewise, Ford hired Fierce, Isakowitz & Blalock who used Aleix Jarvis, former Legislative Director and Chief policy Advisor to Senator Lindsey Graham (R-SC) (Office of Public Records, 2007b). In total and over all issue areas in 2007, 50 out of 59 lobbyists used by Ford (Center for Responsive Politics, 2007c), and 74 out of 104 lobbyists used by GM (Center for Responsive Politics, 2007d) were classified as having passed through the revolving door by the Center for Responsive Politics.⁴⁷ Furthermore, three of GM’s lobbyists had previously worked in Congress, such as Robert Walker, who, after 19 years in the House, became a partner in Wexler & Walker in 1997. In contrast, in the first six months of 2007 “the total spending for the Sierra Club, Public Citizen, the Union of Concerned Scientists and other organizations that lobbied for tougher standards was...\$917,108” (Hyde, 2007), which includes money spent lobbying on other bills.

However, despite lobbying by the auto corporations and claims made in the Senate that CAFE was “job-killing”, an appetite for change was in the air, particularly in the Senate. As such, the Senate Majority Leader, Harry Reid (D-NE), asked Senators to “speak for the American people, not the three car companies” (Miller, 2007 p.H7081). Several bills were introduced in the House and Senate that included changes to the CAFE standards and three of which (from Senators Durbin, Obama and Luger) contained a provision that would allow NHTSA to reduce the CAFE standard if the standard would have led to a reduction in safety (Yacobucci and Bamberger, 2007b).

⁴⁷ In 2007, Cerebus Capital Management bought a controlling stake in Chrysler and lobbied under its own name, rather than Chrysler’s, for Chrysler’s interests, which makes untangling Chrysler’s lobbying more difficult in this period. This situation continued until 2009, when Chrysler was declared bankrupt and sold to Fiat.

In this regard, the safety argument had moved from being a controversial topic in 1990, then became the accepted science in 2002 and, by 2007, had become a point that was not challenged by CAFE proponents – Durbin, in particular, had been long term advocate of CAFE increases. In this respect, the safety argument moved from being a hidden power agenda-setting attempt – where certain concerns are raised above others – to an invisible power manipulation – where the ordering of concerns is broadly accepted as legitimate and hence not debated.

At the low-end of the proposed bills was the automaker-supported (Ford, 2007), and the auto-state-representative proposed, Hill-Terry H.R. 2927, which called for fuel economy to be not less than 32 mpg and not greater than 35 mpg by MY2022. At the high end, one proposal had a 40 mpg requirement by MY2023, with many proposals operating alternatively by mandating an annual 4% increase (Yacobucci and Bamberger, 2007b). In the end, Congressional reformers were successful and the authority to alter passenger car standards, as well as the wider structure of CAFE, was given in the 2007 Energy Independence and Security Act (EISA). EISA (Congress, 2007) mandated that CAFE standards must rise to a minimum of 35 mpg by 2020 and, extending EPCA's original treatment of light trucks, should be set at the "maximum feasible" after then. Also, following the advice of the 2002 NAS study very closely, EISA abolished the light truck/passenger car distinction and, instead, brought in an attribute standard for all passenger automobiles under 10,000lbs (Congress, 2007 p.1499). The attribute standard, although not stated in the text of EISA, was understood to be size-based⁴⁸ whereby the larger an automobile's wheelbase is, the lower the fuel economy requirements are. EPCA's two-tier weight-based distinction, then, was replaced by a sliding, many-tiered, scale. EISA, again echoing the NAS study, also allowed auto-manufacturers to trade their CAFE credits both between their internal fleets and with their competitors, and also expanded the application period of CAFE credits from 3 years to 5 years (Congress, 2007 p.1501).

While, at first flush, EISA appears to be a defeat for the automakers, in that the automakers would have been happiest with "no change at all" (Crain, 2007) to the standards since they had learned to live comfortably with the "devil we know" (Dunn, 2006 p.203), the interests of auto manufacturers in general, and the interests of the Big Three in particular, were of central concern during the formulation of EISA. In

⁴⁸ Recorded Interview with Congressional Research staffer, 8th April 2011

many areas, EISA represented a compromise with industry demands; the pressure within the political system may have finally overcome corporate power, but it did not overwhelm it nor defeat it. The main compromise was with the 35 mpg by MY2020 and the hanging MY2030 requirement (Inside Energy, 2007). Like the Bryan Bill before it, initial legislation detailing CAFE increases called for a 40 mpg standard to be reached ten years after enactment (Durbin, 2007 p.S8017). As the legislation progressed, within the Senate a “compromise” of 35 mpg by 2020 and a 4% increase until MY 2030 emerged (Durbin, 2007 p.S8020). However, in the final legislation (after the House had passed an energy bill containing no mention of CAFE) this requirement was further diluted by the stripping of the annual 4% improvement from MY2021 through to MY2030 and leaving it as the “maximum feasible” as understood by NHTSA. Put another way, an increase to 56 mpg by 2030 would have been required by law, but was instead left open and subject to later regulation (Bragman, 2007). So, while the end result was not as low as the 32-35 mpg by 2022 in the Hill-Terry bill, it was significantly lower, and more flexible, than what was potentially on the table. Senator Debbie Stabenow (D-MI) noted the role of Michigan politicians in the resulting compromise, saying

"I want to praise Congressman John Dingell and Senator Carl Levin for their great work in improving this legislation during House and Senate consideration. It has been a pleasure to partner with them in this effort. There is no question that the CAFE regulatory compromise was a victory in our hard fought and on-going efforts to support the American auto industry and our proud auto workers who are the back-bone of America's middle-class." (US Fed News, 2007)

Furthermore, while the automakers were subject to the “costs” (discussed in the implementation section) of CAFE compliance, following work led by Michigan Congressmen (Congressional Record, 2007) EISA included compensatory measures for the auto industry. The main compensatory measure authorised by EISA were \$25 billion worth of low-interest loans that were made available to the auto industry (Cooney and Yacobucci, 2008 p.1). Viewed by many as a bailout (ibid.), these loans represented the “largest government subsidy for the auto industry since the [1979/80] Chrysler bailout” (Marr and Montgomery, 2008) and were designed, by including a provision for the refurbishment of facilities over twenty years old, “to keep

out [the] Japanese” (ibid.) and only provide funds for the US companies. Further to the loans, EISA included grants for next-generation vehicle technology, for the domestic manufacture of hybrid vehicles, for research into improvements to battery technology and for the electrification of automobiles.

Moreover, in a move that particularly helped the Big Three automakers because of their reliance on SUVs, EISA’s move to an attribute-based standard (supported by the 2002 NAS study on the grounds of safety) allowed a variegated market (NHTSA, 2008 p.4), although with a no-backslide provision. Now, instead of each of the automakers having to meet the fuel economy requirements across their fleets, the fuel economy requirement is applied to the whole fleet and each automaker only has to meet the requirements within the size-classes that they operate in. The consequence of this change is that US automakers would no longer need to balance their CAFE number by selling marginally-profitable or even loss-leading smaller cars, thus, as Senator Levin stated, ending “the many years of discriminatory impacts on domestic manufacturers imposed by the existing CAFE system” (Levin, 2007b p.S15006). Put more simply, “GM will not be penalized for making more SUVs and fewer small passenger vehicles than Toyota” (Durbin, 2007 p.S8017). One interviewee, reflecting the impact of this change on a major Japanese automaker, said that “we didn’t like size-based standards...Because we make smaller vehicles, we were subjected to a higher standard, [the change] did not benefit us.”⁴⁹

Lastly, with pressure from the White House, EISA narrowed (but was unable to eliminate) the capacity of California and other states to set their own independent fuel economy standards. Because of the *Massachusetts* decision the EPA, under provisions of the Clean Air Act, was legally required to regulate CO₂ emissions and was required to allow California to set its own standards. However, EISA mandated that NHTSA develop fuel economy standards in consultation with the EPA (Congress, 2007 p.1499). This move further strengthened Executive Order 13432 (the Bush Administration’s response to *Massachusetts*), which required the Department of Energy, DOT (of which NHTSA is a part) and the EPA to co-ordinate their rulemaking in the area of vehicle CO₂ emissions. In practice, EISA and Executive Order 13432 meant that EPA’s required regulation of CO₂ emissions was discharged

⁴⁹ Recorded Interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April 2011

through NHTSA's regulation of fuel economy standards. It also meant that automakers would comply with both regulations by complying with one (Government Accountability Office, 2010). In a further shoring up of the consolidation of policy arenas at the federal level, in 2008 the EPA refused to grant CARB the waiver that was required for it to set independent CO₂ emission standards and NHTSA attempted to include language in its rulemaking that would pre-empt state greenhouse gas standards (Rendell, 2008). As such, the capacity of California to drive its own higher standards (and the standards of those states that choose to adopt them) was weakened; something the auto industry had been lobbying for (Energy Washington Week, 2009).

Overall, then, because the political atmosphere had shifted due to a new Democrat majority, continually rising oil prices and pressure from states, the administration and the courts, CAFE reform was "politically unstoppable" (Maynard, 2007). This inevitability was recognised by the auto companies who, instead of maintaining their long-standing outright opposition to CAFE, recognised the necessity of concessions over CAFE and tried to propose legislation that raised CAFE standards, but kept their interests at heart. As Dalmia and Payne (2007) recognised: "Given the backdrop [of rising oil prices, political pressure, etc], Detroit's goal this time was not to dodge stricter CAFE standards – but to minimize their damage". These efforts were partially successful, as when reform came it was mitigated by the interests of autocompanies – the Big Three in particular – in that the standards were not as high as they could have been, compensatory measures were brought in, a variegated market was allowed and authority for setting standards was centralised. So, while EISA was not their ideal outcome, it represents a compromise that the auto companies could live with and that sufficiently accommodated their needs. As such, (then former Congressman) Dave McCurdy, president and CEO of the Alliance of Automobile Manufacturers, expressed the satisfaction of the auto industry with the compromise in saying "we believe this tough, national fuel economy bill will be good for both consumers and energy security" (Maynard, 2007). Likewise, an interviewee from Chrysler indicated that they "quite" supported EISA, but added that "Do we support a fuel economy bill? No, we're not suicidal."⁵⁰

One interesting side point to note is that, despite CAFE being an issue linked with oil

⁵⁰ Recorded Interview with Senior Chrysler staff. 16th June 2011

dependence and the consumption of oil, there was not political pressure opposing or supporting CAFE from the oil companies⁵¹; there is not an oil-auto industry political alliance within this issue area at least. Instead, the oil companies focused on issues that affect their bottom line directly – drilling rights, taxes, the Alaskan Wildlife Refuge, the Outer Continental Shelf and fuel composition requirements. Likewise, auto companies don't think beyond their particular issues. One interviewee recalled that

"In 2001 we were working on an original energy bill and there were a number of high profile issues, including CAFE. I remember walking over from my office to the floor in Capitol and all of the lobbyists, GM and the rest of them, were all catching members of Congress as they walked to the floor and reminding them or whatever the hell it is they do...it's distasteful, frankly...that was on the vote regarding CAFE. The next big vote was on ANWR [the Alaskan National Wildlife Refuge], which would increase our proven reserves by 50% - it's the stuff their cars run on! Every time the price goes up or there's instability, they took a licking. But as soon as the vote for CAFE was over, they were all gone...I thought to myself, y'know, the lack of understanding, or comprehensive review of the facts, and how they relate to their business is dumbfounding."⁵²

In fact, some issues, such as fuel emission requirements, often pit oil companies and auto companies against each other as each try to shift the burden of regulation on to the other.⁵³ Such action indicates that corporations define their self-interest very narrowly and seek to wield political influence on a limited number of issues. The power of individuals corporations, then, should not be understood as primarily a general political phenomena, but a specific phenomena that may be less wieldable outside of areas close to their self-interest.

Summary

In the formulation of policy during the Bush period automaker interests in general, and the interests of the Big Three in particular, were represented in a number of

⁵¹ Recorded Interview with former Congressional Staffer who had worked on several House and Senate Energy Committees, 6th June 2011.

⁵² Recorded Interview with former Congressional Staffer who had worked on several House and Senate Energy Committees, 6th June 2011.

⁵³ Recorded interview with GM Spokesperson, 6th May 2011.

direct and indirect ways and through many mechanisms of influence. Directly, the US automakers publicised their views on CAFE through the media, met with key policy actors and lobbied Congress using millions of dollars and with former Congressional staffers. Indirectly, automaker interests were represented by auto-state Congressmen, by anti-regulatory Republicans, by various front groups, and by the continued deployment, and political legitimisation, of arguments established in earlier years by industry-funded think-tanks. The outcome of all of these avenues of influence was that, despite significant pressure from other actors, the auto industry was heavily represented in the formulation of policy and, while the situation was less than ideal for them, their interests were heavily promoted in the eventual outcome of the policy-making process: EISA 2007.

Implementation

Changes to CAFE, while mandated by the executive and legislature, had to be refined and then put into practice by NHTSA – an executive agency. The process of refining and implementing rules allowed a significant opportunity for policy to be changed and, consequently, offered the autocompanies a further chance to influence policy. So, in order to extend the analysis of American automaker power, this section will examine NHTSA’s CAFE rulemaking procedure during the Bush period using both the 2003 enacted light truck standards and the proposed, but not finalised, post-EISA entire fleet standards as examples.

As part of NHTSA’s rulemaking procedure, it had to set CAFE at the “maximum feasible” level in line with the four factors laid out by the EPCA – technological feasibility, economic practicability, effect of other standards on fuel economy and the need of the nation to conserve energy. The process of rulemaking that NHTSA follows, in line with Executive Order 12866⁵⁴, involves an initial public notification of proposed rulemaking, a proposed rule based on cost-benefit analysis and a period for public comment. Public comment then has to be analysed and responded to before the final rulemaking, which can then be subject to judicial review. All of the data from this process is made available to the public in both the Federal Register

⁵⁴ Signed by President Clinton in 1993, Executive Order 12866 requires executive agencies to undertake cost-benefit analyses of new regulations and to ensure new regulations maximise net benefits. This order continued the practice of cost-benefit analysis that was started by President Reagan “at the behest of persistent industry lobbyists, who clearly viewed it as a tool for squelching and delaying regulation” (Sinden et al., 2009 p.49).

and on regulations.gov, where it is arranged in dockets according to particular rulemakings and which include all non-confidential letters to NHTSA. As such, NHTSA stress the transparency of the decision-making process and, echoing pluralist views, stress that they “meet with all stakeholders”.⁵⁵ Furthermore, following the calls for being based on “sound science”, NHTSA has repeatedly emphasised that, by using cost-benefit calculations, its decisions are “science-based and data-driven”⁵⁶ and seek to portray their rulemakings as apolitical, neutral and based on the “facts”. In these regards, NHTSA’s rulemaking procedure was preconfigured according to invisible power discourses that had previously worked to empower corporations.

Additionally, there are significant avenues of influence for auto corporations within both the process of engaging in cost-benefit analysis and the wider procedures adopted by NHTSA. The following section, then, first examines NHTSA’s use of cost-benefit analysis and how this process both procedurally and intentionally benefited US auto corporations. The section then moves on to analyse wider related issues to do with NHTSA’s rulemaking procedures and the capacity of automakers to influence the final outcomes of NHTSA’s rulemaking. Put together, these points both call into question the neutrality of NHTSA’s rule-making process and suggest that corporate interests were further represented in the implementation stage of CAFE.

Use of Cost-Benefit Analysis

Cost-benefit analysis involves the monetisation of predicted costs and benefits of alternative rules so that a decision that considers and weighs each relevant aspect can be reached. As can be seen in figure 5.1 (which is taken from the 2008 proposed rulemaking), NHTSA’s cost-benefit analysis tried to analyse a wide array of factors. The main benefits of CAFE that NHTSA evaluated were the saving of fuel, the reduction in the costs of oil imports and the benefits of reductions in the emission of pollutants, which, for the 2008 rulemaking only, include CO₂. However, despite the breadth of work done by NHTSA and the precision with which its numbers are presented, its use of cost-benefit analysis inevitably runs into problems that result in it being a political exercise that primarily benefits the auto corporations. There are two main problems with the cost-benefit approach and several further problems

⁵⁵ Recorded Interview with Senior NHTSA Staff, 4th May 2011. Media handler present.

⁵⁶ Recorded Interview with Senior NHTSA Staff, 4th May 2011. Media handler present.

specific to NHTSA’s analysis of CAFE standards.

First, with cost-benefit generally, cost-benefit calculations depend fundamentally on what is counted as a cost, what is counted as a benefit, and what levels these costs and benefits are set at; as the 2002 NAS study mentions, “cost-efficient calculations depend critically on the assumptions one makes about a variety of parameters” (National Academy of Sciences, 2002 p.112). What level costs and benefits are set at, then, necessarily involves taking a disputable, rather than “factual”, position, particularly as many numbers can be dependent upon predictions about the future. For example, the “military security” benefit of reduced oil consumption is rated at \$0. NHTSA set it at this level under the reasoning that US military actions in oil-producing regions would still occur (and costs would remain the same) even if CAFE reduced US oil dependence (NHTSA, 2008 p.61). However, such a position is untenable as, if total US oil dependence on the Middle East and other oil-producing regions bears costs (which NHTSA accepts), there will be benefits in the future, regardless of their separability of the costs at the current point in time – particularly with the inevitable decline of Middle Eastern, and world, oil reserves.

TABLE V-3.—ECONOMIC VALUES FOR BENEFITS COMPUTATIONS (2006\$)

Rebound Effect (VMT Elasticity w/respect to Fuel Cost per Mile)	- 0.15
Discount Rate Applied to Future Benefits	7%
Payback Period (years)	5.0
"Gap" between Test and On-Road mpg	20%
Value of Travel Time per Vehicle (\$/hour)	\$24.00
Economic Costs of Oil Imports (\$/gallon)	
"Monopsony" Component	\$0.176
Price Shock Component	\$0.109
Military Security Component	\$—
Total Economic Costs (\$/gallon)	\$0.285
Total Economic Costs (\$/BBL)	\$11.97
External Costs from Additional Automobile Use Due to "Rebound" Effect (\$/vehicle-mile)	
Congestion	\$0.047
Accidents	\$0.025
Noise	\$0.001
External Costs from Additional Light Truck Use Due to "Rebound" Effect (\$/vehicle-mile)	
Congestion	\$0.052
Accidents	\$0.023
Noise	\$0.001
Emission Damage Costs	
Carbon Monoxide (\$/ton)	\$—
Volatile Organic Compounds (\$/ton)	\$1,700
Nitrogen Oxides (\$/ton)	\$3,900
Particulate Matter (\$/ton)	\$164,000
Sulfur Dioxide (\$/ton)	\$16,000
Carbon Dioxide (\$/metric ton)	\$7.00
Annual Increase in CO ₂ Damage Cost	2.4%

Figure 5-1: Economic Values for Benefit Computations

Source: NHTSA (2008 p.54)

Second, to understand many benefits can require the monetisation of issues that are not necessarily amenable to monetisation (Ackerman, 2007 p.206). For example, calculating the benefit of CO₂ reduction involved estimating the economic impact of

possible climate change. In looking into CO₂, NHTSA tried to provide a monetary estimate of the contribution of US automobiles to an issue that will have an unknown impact upon the entire world for numerous generations and then weigh this unknown impact against the increased costs of auto producers in one country (Masur and Posner, 2011 p.1560). Essentially, NHTSA tried to put a price on a “priceless” benefit (Ackerman, 2007 p.208). Likewise, emission damage costs were calculated according to how much damage they do to humans, which, in the process of monetisation, involves establishing the “value” of a human life (ibid. p.208). These two problems resulted, as can be seen in the above examples, in NHTSA underestimating/being unable to estimate the benefits of CAFE reform. The benefits of CAFE reform were thus poorly understood.

Equally, even with issues that could be estimated with reasonable accuracy NHTSA underestimated the benefits. For instance, NHTSA predicted that the retail price of gasoline, expressed in 2006 dollars, “during calendar year 2020 is \$2.36 per gallon, rising gradually to \$2.51 by the year 2030 (these values include federal, state and local taxes)” and maintaining the 2030 price until 2050 (NHTSA, 2008 p.55). Not only is this assumption questionable with hindsight, since prices are much higher now and poised to remain high, but it was also questionable at the time of the analysis (2008) when oil prices were rapidly rising. In fact, NHTSA faced criticism from environmental and consumer groups for their view on the price of oil in their 2008 proposed rulemaking. Likewise, lawmakers protested, with ten Senators writing to the Transport Secretary to express that they “do not believe it is reasonable to assume that the price of gasoline will drop precipitously in the coming years, as NHTSA has done” (Karey, 2008). The importance of this variable is that it was a major input for determining cost effectiveness; as can be seen in NHTSA’s 2008 high-end sensitivity analysis where the predicted cost of gasoline was instead set to rise to \$3.85 by 2020 and which, as a result, recommended passenger car standards in MY2015 moving from the proposed 35.7 mpg to 42.2 mpg.

As such, NHTSA benefit estimates were systematically underestimated. In contrast, however, “cost” estimates were both over-played and imagined. This situation suited automobile industry interests as the costs calculated by NHTSA were primarily the

cost to manufacturers of utilising more fuel efficient technologies in their cars⁵⁷, the costs of developing the manufacturing capacity for the mass production of more fuel efficient vehicles, and the design/prototyping costs of future cars (NHTSA, 2008 p.54); in this manner, the automobile industry was seen as getting many of the costs, but few of the benefits. Such “costs” for manufacturers were fundamentally misrepresented in two ways. The first way in which costs to manufacturers were misrepresented was in simply estimating how much more the companies would have to invest in new technologies since expenditure on more fuel efficient technologies can be recouped through a higher sticker price to the consumer⁵⁸; the manufacturer, in this case, does not lose anything. As such, this “cost” can be labelled as “investment” in that the manufacturer puts in more money, produces a better product (gaining intellectual property rights over new technologies as well) and then recoups that money. It is also worth noting that EISA specifically provided loans to offset some of the investment required by higher CAFE standards, which was not included in NHTSA’s analysis.

The second way in which costs were misrepresented is that the “costs” were understood as reductions in benefits relative to the status quo projected into the future (Sinden et al., 2009 p.57). Again, these are not direct costs that these companies will bear, but represent the departure from a “business-as-usual” situation as cost. These “costs”, then, actually represent changes over time to the currently existing rights and preferences, which are assumed to be continuing into the future. Thus, for an example of the fluidity of this notion of cost, if the price of oil increased, and subsequently consumer demand for higher-efficiency cars increased, than the experienced “cost” of CAFE compliance would be reduced, or even eliminated as the existing rights and preferences (fewer sales of low-mpg vehicles) are changed (Center for Biological Diversity, 2008 pp.5-6). NHTSA’s analysis, then, does not support its EPCA-remit of setting the “maximum feasible level” but instead works to conform law “to the predilections of the status quo” (Sinden et al., 2009 p.57) and to the existing distribution of benefits and privileges.

In sum, NHTSA’s cost-benefit calculations were unable to offer a good

⁵⁷ Recorded Interview with Senior NHTSA Staff, 4th May 2011. Media handler present.

⁵⁸ Equally, investing in more fuel efficient technology is likely to have beneficial consequences for the competitiveness of the overseas operations of the manufacturers due to the higher fuel economy requirements in many developed markets.

understanding of the benefits of CAFE increases, but were able to advance an understanding of the “costs” to corporations. NHTSA, following long-established procedures, systematically engaged in a process whereby public benefits – such as the saving of fuel (underestimated because of optimistic predictions about the cost of gasoline), reductions in global warming (impossible to estimate) and increased military security (impossible to separate) – were marginalised and then discounted against the requirement for increased private investment which, under provisions in EISA, was going to be partially subsidised by the government. Essentially then, several hidden power mechanisms were used to “organise out” environmental and health interests and “organise in” corporate interests. Moreover, in this use of a strictly economic approach to understand diverse issues, it can be seen that NHTSA’s work conformed to corporate-empowering neoliberal economic discourses that worked to the exclusion of other discourses and potential ways of understanding the topics.

Following the logic, as stated by a Department of Transport spokesman, that “it doesn’t make sense to impose costs on manufacturers if...those cost requirements do not produce obviously benefits equivalent to the cost” (Duvall, 2008 p.433), the cost-benefit approach facilitated a greater regard for the interests of the auto industry over and above the public interest. As these calculations formed the basis of NHTSA’s rulemakings, the rulemakings were set at a level more to the industry’s liking than the “maximum feasible” level required by the EPCA. Such an outcome was always likely as cost-benefit analysis has consistently been used in the US as a “one-way ratchet” to weaken environmental regulations (Sinden et al., 2009 p.50, Ackerman and Heinzerling, 2001).

Further Issues

Beyond the assumptions that go in to NHTSA’s cost-benefit analysis, there are five major issues with NHTSA’s role in CAFE standards that warrant attention. The first major issue is that NHTSA calculations on the economic and technological feasibility of new CAFE standards were developed with regard to auto company product plans, which were freely given (rather than subpoenaed) and kept confidential by NHTSA for business reasons. As NHTSA says “the proposed standards are, *in the first instance*, based on the confidential product plans submitted by the manufacturers” (NHTSA, 2008 p.24355 [emphasis added]). In other words, the development of a

CAFE regulation by NHTSA, and of the final corporate product plans that comply with new regulations, occurs in an iterative process that begins with corporate product plans.

The sharing of product plans, and of confidential information more generally, gives the auto companies the capacity to misrepresent, in a rather opaque way, the costs associated with new regulations and the capabilities of the auto companies themselves; the auto companies are able to mislead NHTSA with little accountability or oversight of their conduct. Moreover, such misconstrual need not be intentional, but more the basis of mind-set. As one interviewee said “the auto industry is risk averse” when considering new regulations that require utilising new technology because

“there is uncertainty about how well these options are going to work and also a range of costs depending upon how fast costs come down with learning and experience and what suppliers do and so on...and so the auto industry, they naturally take the conservative end of each of those ranges...they’re not cheating, they’re not even wrong; it’s a different mind-set.”⁵⁹

Regardless of intent, the confidential nature of industry-agency information-sharing gave the auto industry the capacity to mislead without checks by other groups – they worked in a closed political space without any means of public oversight.

Furthermore, the working and confidential relationships formed through the information-sharing process gave the auto companies a direct and exclusive line of access to lobby NHTSA and an environment where they can do so opaquely. Such lobbying, if successful, could skew the entire cost-benefit model that NHTSA rulemaking is based upon. For example, in 2006, despite opposition from the Union of Concerned Scientists, GM successfully lobbied NHTSA for setting the estimated rebound effect of new rules at 20% (Bialik, 2009). The models, then, predicted that lower oil consumption caused by efficiency improvements would be offset by consumers reacting to lower costs of vehicle use by driving, on average, over a fifth more than currently. As such, the model produced a lower estimate of total fuel savings, a higher estimate of rebound congestion and accidents, and so justified a lower CAFE standard.

⁵⁹ Recorded Interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April 2011.

The second major issue of concern is that the standards were set with regards to a “baseline fleet”, which is a model of the vehicles available, the vehicles currently being sold, and the vehicles estimated to be sold in the future. Up until EISA 2007 – so for the light truck reform in 2003 – the baseline fleet was based upon confidential manufacturer data, which again allowed opaque manipulation. In order to improve transparency EISA 2007 mandated that the baseline fleet was to be set in collaboration with EPA and had to rely on publically-available data about the MY2008 fleet. Even so, in both such procedures, the baseline fleet takes current performance requirements as a given.

Such an approach, however, does not reflect that the current performance requirements of the baseline fleet are significantly greater than previous baseline fleets. The reason for the increase in performance was that since the late 1980s, auto companies decided to prioritise performance over fuel economy; the fuel efficiency of engines increased, but the fuel savings have been “spent” on performance. As one interviewee observed “industry, on average, increases efficiency by 1-1.5% [a year] and doesn't turn it into fuel economy because customers use that in other things”.⁶⁰ Thus, a MY1990 baseline would have considered much greater increases in fuel economy as being possible with current fuel efficiency technology. The legislative deadlock from 1990 onwards, then, afforded the automotive corporations the leeway to enact changes for 15-20 years – such as increasing horsepower and acceleration (see fig 5.2) – that were not in line with the “maximum feasible” rule, but which are then considered the status quo and so protected by current and future rulemakings. NHTSA artificially limited itself to CAFE standards that did not reduce performance attributes in any way.

⁶⁰ Recorded Interview with Senior Chrysler staff, 16th June 2011.

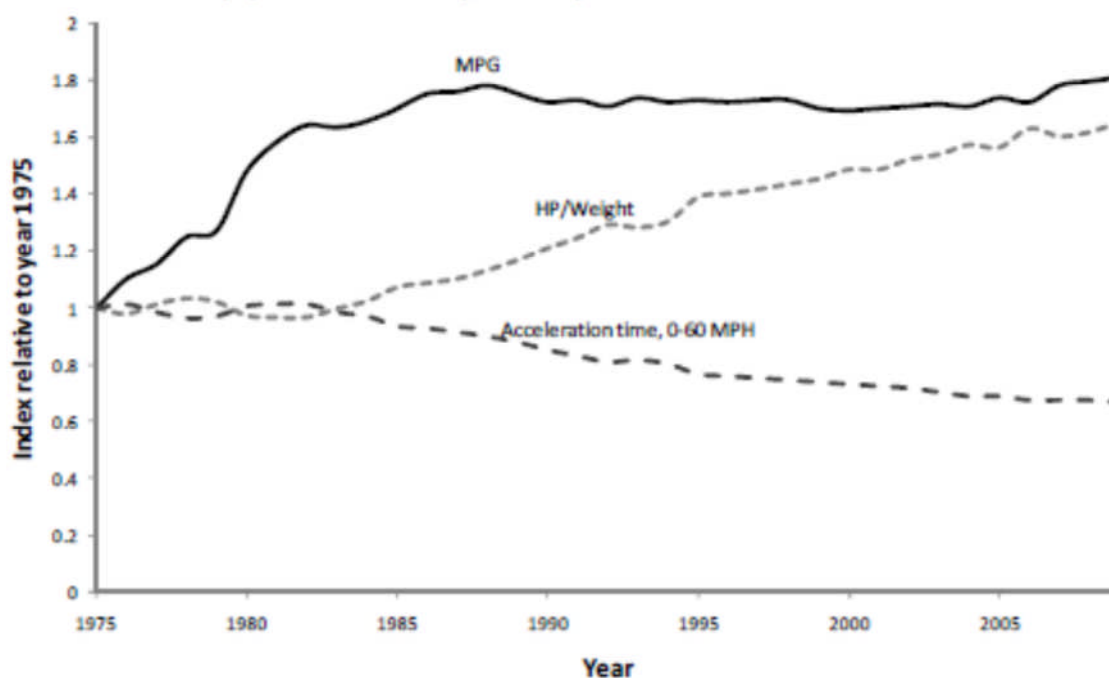


Figure 5-2: MPG (efficiency), horsepower to weight ratio (power), and acceleration time (speed) of new US vehicles since 1975.

Source: Anderson et al. (2011 p.95)

The third major issue of concern is NHTSA's interpretation of "economic practicability". In its 2002 provisional rulemaking for light trucks, NHTSA explained its understanding of the limit of economic practicability as "that of the least capable manufacturer with a substantial share of the relevant market" (NHTSA, 2002a p.77020), defending this interpretation on the grounds that pushing further could impede "motor vehicle safety". In the 2002 rulemaking, this interpretation meant that NHTSA determined the "maximum feasible" level of fuel economy on the basis of the capacities of Ford, GM and, particularly, DaimlerChrysler (ibid. p.77019) and not of the market, or industry, as a whole.

Yet, acting in such a manner is against NHTSA's remit, as defined by the EPCA. The EPCA (NHTSA, 2003 p.16872) states that the "determination of maximum feasible average fuel economy should not be keyed to the single manufacturer which might have the most difficulty achieving a given level of average fuel economy." By interpreting economic feasibility as the capabilities of a few manufacturers, NHTSA allowed the scope of its recommendations to be bound by the manufacturing decisions, and health, of these (American) auto companies. Moreover, these companies were, at the time, increasingly ailing as SUV sales fell and were seen as out of touch with consumer demands. This point is particularly important as two of

the companies, Chrysler and GM, were later to go bankrupt, meaning that the status quo situation that NHTSA bound itself to was characterised by organisations that were failing, weak and inefficient, a situation that had occurred on the basis of the choices that these corporations had made.⁶¹

The fourth major issue concerns the data gathered by NHTSA and its considerations of alternatives. NHTSA's data, gathered to allow it to set the "maximum feasible" level, was limited to the US, to product plans within the US, and to the state of fuel economy technology within the US. In focusing on this data, comparisons with the level of fuel economy standards and the deployment of technology in other countries were not performed and data of the non-US market was not considered. However, such comparisons, in that they represent already-achieved technology deployment, could be very fruitful in understanding the maximum technological and economic feasibility of fuel economy requirements, particularly as the Big Three, to varying degrees, are present in other markets in which they are subject to stricter fuel economy requirements.

The fifth and final major issue is that NHTSA itself has been criticised for being too weak, for being too close to the auto industry, and because many of its former staff have gone through the "revolving door" to later work for the auto industry. In a 2010 Congressional hearing former NHTSA director Joan Claybrook highlighted several weaknesses she saw in the organisation, seeing it as being "grossly underfunded" (Claybrook, 2010 p.136) and "very secretive" (ibid. p.135). She also criticised the revolving door between NHTSA and the auto companies, noting that

"there are 28 former top officials of this agency that have gone to work for the auto companies in one capacity or another in the last 25 years. A former NHTSA administrator, several of them former chief counsels, former deputy administrators, top engineers, and lawyers of this agency, have become the face and voice of auto manufacturers after they have left the agency" (ibid. p.135).

Claybrook concludes in her testimony that "NHTSA has become a lapdog, not a watchdog" (ibid. p.142).

⁶¹ As one interviewee said, in not moving towards greater fuel efficiency, "GM wasn't in trouble because it was smart". Interview with Congressional Staffer, 11th May 2011.

One such example of the revolving door was the appointment of the NHTSA Administrator from 1983-1989, Diane Steed, to head the Coalition for Vehicle Choice. Yet, the relationship also works the other way, with a 2010 report by The Washington Post identifying two former auto industry workers working for NHTSA. The report also notes that while moving from industry to government “typically includes taking a pay cut, employees can cycle back into the private sector within a few years, sometimes doubling their salaries with their highly marketable insider knowledge of the agency” (Kindy, 2010). Such is the relationship that Daniel Becker, director of the Sierra Club's global warming and energy team, said in 2002 that “NHTSA is a wholly owned subsidiary of Detroit” (Zagaroli, 2002). A different (yet suggestive) slant on the relationship was provided by a Chrysler executive, who said that

“outside of public view, in the background, the relationships that industry has with the regulators is – I'm not going to say chummy, buddy or friendly, that's not the point – it's very professional and there's two-way respect on [fuel economy standards], and that respect is built over decades.”⁶²

While the close relationship between NHTSA and the automakers could be justified on pragmatic grounds – NHTSA needed information that the corporations possessed – such a justification would be based on a notion of output legitimacy, rather than input legitimacy (Scharpf, 1997 p.19). Output legitimacy is the idea of making decisions in the best interests of the people (achieving the best possible results), rather than working in such a manner that people represent their own interests in line with democratic norms (Kratowil, 2006). Therefore, such a pragmatic argument is only persuasive if the outcomes are in the best interests of the people, rather than, as shown above, in the interests of corporations.

Summary

As in the formulation of CAFE standards, the process of CAFE implementation also saw significant representation of auto industry interests, mainly through hidden power mechanisms of influence. This representation of interests occurred for three main reasons. Foremost was the process of cost-benefit analysis, which systematically underestimated benefits and valued these against imagined, or mislabelled, costs. In fact, the use of cost-benefit analysis itself served to obfuscate

⁶² Recorded Interview with Senior Chrysler staff, 16th June 2011.

the very political and subjective process of rulemaking by hiding assumptions and decisions behind numbers, allowing NHTSA to present itself as science-driven and deploy both the sound science discourse and neoliberal discourses. Second, NHTSA, perhaps due to the revolving door or to genuine belief in corporate-empowering discourses, chose to analyse from a narrow, US-centric and conservative perspective. Instead of taking an independent stance in understanding feasibility of standards (such as through international comparison), NHTSA used corporate information, considered corporate bottom-lines and worked within the framework of previous corporate decisions. Such a consideration of the status quo fell significantly short of NHTSA's "technology-forcing" mandate and requirement to work out the "maximum feasible" level. Third, automakers benefited from cosy and opaque relations with NHTSA, created by both the sharing of confidential information and, over the long-term, of staff, between the automakers and NHTSA.

Following this line of thought, the Center for Biological Diversity (2008) argued that the 2008 proposed rulemaking "systematically manipulates the analysis, assumptions and modelling inputs such that NHTSA selects proposed CAFE levels far below [EPCA's] technology forcing mandate" and that the use of cost-benefit analysis in this instance "defer[s] overwhelmingly to the automakers and prioritize[s] the economic benefit of the automakers." Corporate influence, then, further moulded CAFE standards in the policy implementation stage.

Outcomes and Potential to Reduce Oil Dependence

There were two major policy outcomes regarding CAFE during the Bush administrations. First, using the powers afforded the Secretary of Transport under EPCA, light truck standards were increased from 20.7 to 22.2 mpg (NHTSA, 2003). Second, EISA 2007 mandated a minimum increase in the standards to 35 mpg by 2020, with NHTSA given the power to increase the standard beyond these levels through to MY2030. However, both light truck reform and EISA reforms ran into problems within the Bush period in producing outcomes that did, or would, reduce US oil dependence.

The light truck standards, while successfully applied in MY2005, MY2006 and MY2007, suffered a legal setback when NHTSA attempted to issue new rules for MY2008-2011. In the *Center for Biological Diversity v. National Highway Traffic*

Safety Administration, which included eleven states, three environmental groups and two cities in the petitioners, the Ninth Circuit Court ruled that, by not including the costs of the emission of greenhouse gases and by not closing the SUV loophole, the final rule was “arbitrary and capricious” and “contrary to the EPCA” (Carlarne, 2010 p.111). As such, the Ninth Circuit Court sent the rule back to NHTSA to be reanalysed and then amended (NHTSA, 2008 p.24362). In doing so, the Ninth Circuit Court both highlighted the point made above about the selectivity of cost-benefit analysis and also ratcheted up the legal pressure on the administration to reform CAFE standards.

However, the actual impact of the ruling on CAFE standards was limited as the automakers followed the intent of the regulation despite not being bound by it because they had already designed and begun manufacturing the vehicles. Furthermore, the light truck rulemaking struck down by the court on 15th November 2007 was effectively overwritten by Bush’s signing of EISA (which mandated full fleet rulemaking) on 19th December 2007. Thus, the outcomes of Bush’s raising of light truck standards were twofold. First, the fuel economy of light trucks that were produced by MY2008 was increased by 2.4 mpg, from 20.7 to 23.1 mpg. Second, through the Ninth Circuit Court decision, NHTSA was forced to assess the impact of greenhouse gas emissions in subsequent rulemaking analyses, including its 2008 analysis.

Similarly, during the Bush period EISA did not produce new CAFE standards. While EISA mandated changes for MY2011 and NHTSA conducted the analysis for changes to standards for MY2011-2015 (analysed in the previous section), no new standards were actually enacted. The reason for this inaction by the Bush administration was the financial difficulties that the US auto industry was suffering in the face of the onset of the global financial crisis, which eventually bankrupted both Chrysler and GM. The decision, announced in a brief statement by the Department of Transport, passed the responsibility for finalising the standards to the incoming Obama administration, saying

“the recent financial difficulties of the automobile industry will require the next administration to conduct a thorough review of matters affecting the industry, including how to effectively implement EISA. The National Highway Traffic Safety Administration has done significant work that will position the next

Transportation Secretary to finalize a rule before the April 1, 2009 deadline”
(Department of Transport, 2009).

In delaying the rulemaking, Bush reopened the policy implementation stage and allowed further renegotiation of the CAFE standards at this level. To try to ensure the health of the auto companies a 1 mpg⁶³ lower requirement in MY2011 was enacted by the Obama administration (Center for Biological Diversity, 2009). The decisions to both delay the rulemaking and the MY2011 reduction by the Obama administration displays the concern with which the political establishment has for the health and vitality of the American auto corporations and how their interests are, on occasion, put above many others; it displays the visible power the major US auto corporations have on a national scale. This concern is, in fact, best demonstrated by the bailouts of both GM and Chrysler (Singh, 2012, Moore et al., 2012), despite their troubles being largely self-inflicted⁶⁴ and the free market discourse of both the companies and the government in better times.

Widening the context slightly, even without the problems that the policies faced in producing discernible outcomes, the EISA changes (which incorporated new light truck changes post-*Center for Biological Diversity*) represented “exceedingly modest”⁶⁵ successes in decreasing US oil dependence. This modesty is apparent in both a historical and a comparative context. In a historical context, the final figure of 35 mpg represents 5 mpg less than the level the 1990 Bryan bill was calling for by MY2000. In essence then, EISA mandated an increase 5 mpg lower and 20 years later than the Bryan bill (although on vehicles with greater speed and power). Moreover, if the minimum standards required by EISA had been implemented then the US would have only seen a total increase of 10 mpg in the 35 years since 1985.

In a comparative context, US standards were already significantly below fuel economy standards in similarly-developed countries (see fig. 5-3) and, if the 35 mpg by MY2020 provision was achieved, would remain below currently achieved levels of fuel economy around the world. Current European, Japanese and Chinese

⁶³ The MY2011 standards were reduced from Bush’s proposed 31.2 mpg for passenger cars and 25 mpg for light trucks to 30.2 mpg and 24.1 mpg respectively. The new light truck standard was 0.1 mpg higher than the MY2011 standard that was overturned by the Ninth Circuit Court.

⁶⁴ While the global financial crisis was the proximate cause of the economic troubles of the American automakers, ultimate causes include long-term declining market share, their production of low-quality smaller vehicles and an over-reliance on profits from SUVs coupled with a massive increase in the price of oil (Canis and Yacobucci, 2010).

⁶⁵ Recorded interview with environmental think-tank staff, 11th April 2011.

standards are 43.3 mpg, 42.6 mpg and 35.8 mpg respectively (Center for Biological Diversity, 2009, An and Sauer, 2004). That the Chinese standard is higher than the US standard is particularly noteworthy as it would appear the Chinese have managed to surpass the US's "maximum feasible" fuel economy, in spite of the relative inexperience of Chinese automakers and the lower technology base in the country.

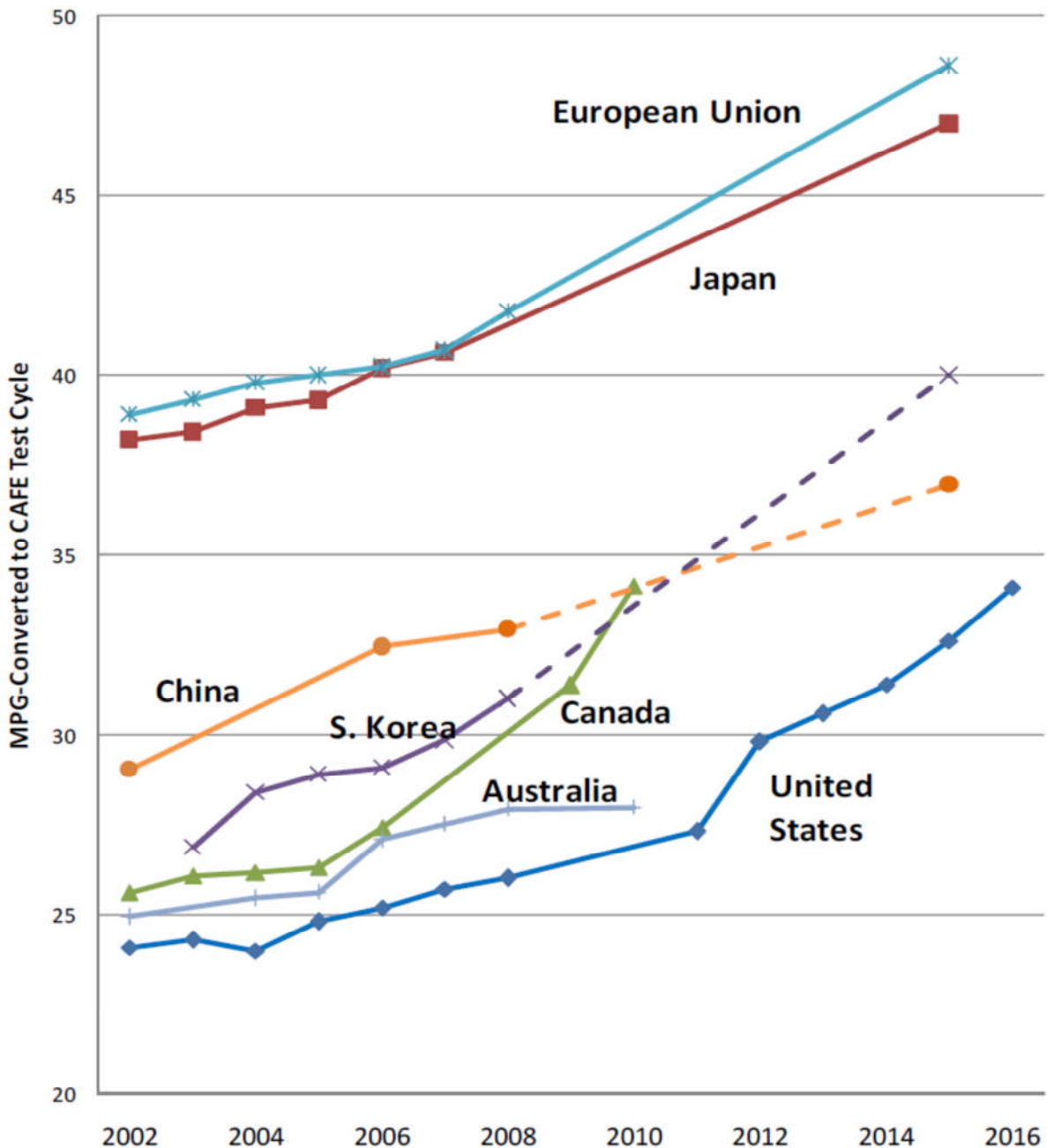


Figure 5-3: Fuel Economy Standards by Country

Notes: Dashed lines indicate proposed fuel economy targets not yet enacted. For Canada, the program includes in-use vehicles. This graph includes Obama era changes to CAFE.

Source: Anderson et al. (2011 p.92)

Widening the context further, the changes to CAFE made by the Bush administration validated, endorsed and furthered changes and decisions that had been made by automakers to the size, features and performance of the vehicles that they produce, which had limited their gains in fuel economy (fig. 5.2). The deference with which NHTSA treated the market situation at the time meant that the market environment, which had been created by consumers following the lead of the automakers for 30 years (Inslee, 2008 pp.429-430), was not challenged or rectified; the visible power production decisions of corporations were not reversed because the invisible power consumer choice discourse held that the production decisions simply reflected consumer demand. Essentially, the eventual reform of CAFE standards internalised within CAFE standards the decisions of corporations to exploit the “SUV loophole” in the twenty years prior. Not only did it internalise those decisions, but it specifically made provisions to accommodate (what had become) the dangerous over-reliance of US automakers on profits from SUVs. As such, automakers were able, in the 1985-2009 period (between which no new fleet standards were set) to fundamentally alter the “situation on the ground” and then use the modified status quo as a position from which to negotiate changes.

There was, however, one possible major benefit in terms of oil dependence. EISA 2007 moved the responsibility for setting CAFE standards from Congress to the executive, specifically to NHTSA. While Congress does retain the capacity to restrict NHTSA funds, as in the 1995-2001 period, EISA 2007 mostly removes Congress as a blocking mechanism to new CAFE standards; another 20 year debate will not need to occur. After Bush postponed the finalisation of new standards, the Obama administration has subsequently utilised the provisions of EISA 2007 to raise CAFE standards higher than the Bush-era proposed standards (for MY2012 onwards).

Conclusions

As seen at the start of the formulation section, a GM Vice President, Thomas Davis (2001), set out the interests of the Big Three automakers early on in the Bush presidency;

“Any reform of CAFE would have to address the significant adverse consequences of the current system, including the disparate impact on domestic [and] foreign automakers...the adverse impact on driver and

passenger safety; the opposition to natural market forces; the negative impact on the consumer's choice of vehicle; the encouragement to increase driving by reduced mile per gallon costs...CAFE cannot be fixed by simply a simple shift in the formula. CAFE is determined primarily by what people choose to buy, and that choice reflects consumer needs."

Each of these concerns, all of which are highly debatable, was carefully considered when reforming CAFE, with many becoming central to the Bush-era debate and, subsequently, included in the process of reforming CAFE standards. The result of the inclusion of these issues, alongside many other factors, resulted in CAFE reforms that paid inordinate attention to the interests of major automotive corporations; the US auto corporations realised their interests to a large degree. In the political arena, then, the corporations were not directly ruling, but formal power was used to rule in the interests of the Big Three auto corporations.

The reasons for the power of the US automobile corporations in CAFE policy evolution during the George W. Bush administrations are many and varied, with events prior to the Bush-era having done the groundwork for Bush-era corporate power. The most important mechanisms of influence wielded by the auto corporations that set the stage for the Bush-era negotiations were production decisions, Republican and auto-state politician support, and the establishment of several CAFE-specific discourses through think-tanks. Through production decisions the economic landscape that policy had to navigate was changed, with the large increase in SUV sales eroding the spirit of CAFE standards. Republican and auto-state politician support ensured a standstill in Congress that facilitated the continual operation of the first mechanism. Finally, through think-tanks many of the discourses – the safety argument, consumer choice and Jevons' paradox – that were used to good effect during the Bush period were provided.

These three mechanisms continued to work, alongside other mechanisms, in the Bush period, as figure 5-4 illustrates.

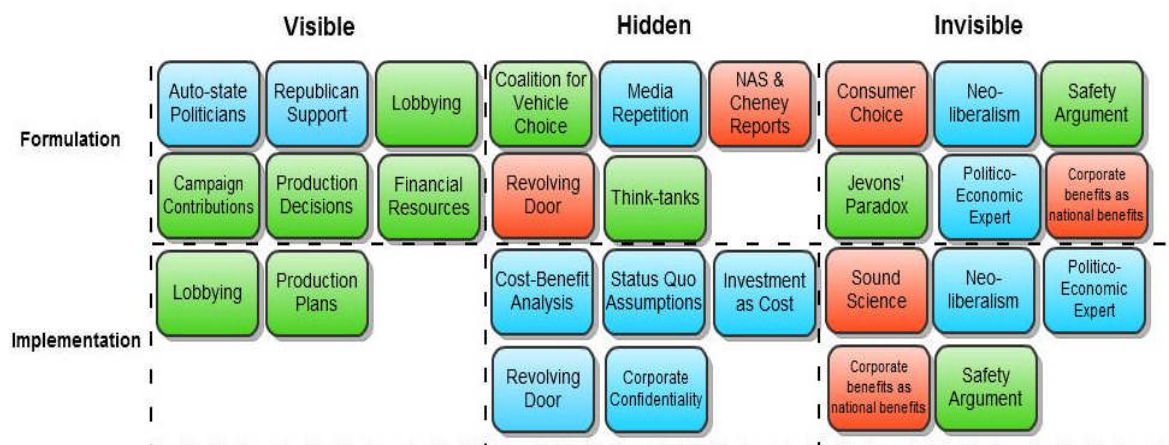


Figure 5-4: Mechanisms of Influence in CAFE Standards

Note: Green boxes refer to actions that were primarily taken by the automakers, blue to actions primarily reliant on others/structural conditions and red to issues that were both structural/indirect and involved actions by the automakers. The direct/indirect nature of a mechanism is not necessarily set, with the revolving door, for instance, being both directly and indirectly used in the formulation stage, but only indirectly in the implementation stage.

As figure 5-4 shows, corporate interests were represented during the Bush period in a number of different ways. The most reliable of these mechanisms was neoliberalism and the view of corporations as politico-economic experts. These invisible power mechanisms were not issues the auto corporations had to work to support, nor were they issues that were significantly debated. In contrast, other discourses – the safety argument in particular – involved corporate action to a great degree, as well as involving the support of other actors (auto-state politicians, NAS, the media, think-tanks and NHTSA). In the formulation stage, the discursive environment worked to paint CAFE standards as irrational, as dangerous, as against freedom and not making economic sense; forcing proponents of CAFE to negotiate some tricky political terrain and even internalise (or, at least, not challenge) some of the discourses.

Other forms of power were also working in concert with the invisible power discourses in the formulation stage. Through many hidden power mechanisms, many of the invisible power discourses were strengthened both in terms of their perceived legitimacy (such as in NAS’s gold-stamping of the safety argument) and the extent of their dissemination to the public and policymakers – which the media, think-tanks and the Coalition for Vehicle Choice all helped with. On the level of visible power, auto-state politicians (also supported through campaign contributions) were particularly active in taking measures that protected the auto industry (who also

aggressively lobbied independently) from new CAFE standards for many years. In 2007, when external events weakened CAFE opposition, such actions were to prove very useful in negotiating a compromise that the auto industry could support. The formulation stage, then, saw a full spectrum of power mechanisms being deployed.

The implementation of CAFE standards, however, involved less visible power mechanisms and more hidden power mechanisms than the formulation stage. This situation was always likely as NHTSA's rulemaking process is relatively protected from political pressure – certainly in comparison to Congress. However, despite NHTSA's protection, the procedures adopted and the assumptions made ensured the representation of the interests of the Big Three. This “organising in” of corporate interests makes sense in terms of strongly embedded invisible power discourses, most notably in the form of neoliberal support for cost-benefit analysis – which had actually been legally embedded in the US government since President Reagan. One other notable discourse that significantly effected NHTSA's procedures (and which the auto corporations sought to cultivate) was “sound science”, as it justified approaches to understanding the world, such as cost-benefit analysis, that aim more for precision than accuracy.

The end result of the operation of corporate power in the policy evolution of CAFE standards was policy that prioritised corporate interests over national interests – that prioritised corporate profits over beginning to deal with US oil dependence. Moreover, the societal impact of the changes made during the Bush period were, at the end of the Bush period, yet to be realised and are still subject to corporate power in the marketplace and possible future renegotiation in the political arena.

Bibliography

- Achenbach, J. 2006. The Tempest. *The Washington Post*, 28/05/2006.
- Ackerman, F. 2007. Priceless Benefits, Costly Mistakes: What's Wrong With Cost-Benefit Analysis? In: Fullbrook, E. (ed.) *Real World Economics: A Post-Autistic Economics Reader*. London: Anthem Press.
- Ackerman, F. & Heinzerling, L. 2001. Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection. *University of Pennsylvania Law Review*, 150, 1553-1584.
- Alcott, B. 2005. Jevons' Paradox. *Ecological Economics*, 54, 9-21.
- Alliance of Automobile Manufacturers. 2001. *Press Release: NAS Study Confirms Need for CAFE Reform* [Online]. Advocacy and Public Policymaking Project.

Available:

http://lobby.la.psu.edu/107th/126_CAFE_Standards_2/Organizational_Statements/AAM/AAM_043001.htm [Accessed 22/11/2011].

- Amin, A. & Thrift, N. J. 2004. *The Blackwell Cultural Economy Reader*, Oxford, Wiley-Blackwell.
- An, F. & Sauer, A. 2004. Comparison of Passenger Vehicle Fuel Economy and GHG Emission Standards Around the World. Arlington, Virginia: PEW Centre.
- Anderson, S. T., Parry, I. W. H., Sallee, J. M. & Fischer, C. 2011. Automobile Fuel Economy Standards: Impacts, Efficiency, and Alternatives. *Review of Environmental Economics and Policy*, 5, 89-108.
- Automotive News. 2007. 10 Friends in Congress. *Automotive News*, 02/01/2006.
- Ballesteros, M. F., Dischinger, P. C. & Langenberg, P. 2004. Pedestrian Injuries and Vehicle Type in Maryland, 1995-1999. *Accident Analysis & Prevention*, 36, 73-81.
- Bamberger, R. 2002. Automobile and Light Truck Fuel Economy: The CAFE Standards. Washington D.C.: Congressional Research Service.
- Baron, D. P. 1998. Integrated Market and Nonmarket Strategies in Client and Interest Group Politics. Stanford University.
- Beder, S. 1998. Ecological Double Agents. *Australian Science*, 19, 19-22.
- Bialik, C. 2009. *Kicking the Tires on the "Rebound Effect"* [Online]. Wall Street Journal. Available: <http://blogs.wsj.com/numbersguy/kicking-the-tires-on-the-rebound-effect-698/> [Accessed 07/11/2011 2011].
- Boehlert, S. 2001. Corporate Average Fuel Economy (CAFE) Reform. *Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Bond, K. 2003. Energy Policy Act of 2003. *Congressional Record*. Washington D.C.: Government Printing Office.
- Bovee, T. 1988. Fuel Economy Standards Cost Lives, Study Says. *The Associated Press*, 22/03/1988.
- Bradsher, K. 2004. *High and Mighty: The Dangerous Rise of the SUV*, New York, Public Affairs.
- Bragman, A. 2007. U.S. Congress Settles on Fuel Economy Increase: 35 MPG by 2020. *Global Insight*, 03/12/2007.
- Burnett, S. 2007. *A Blood for Oil Trade Congress Can Get Behind* [Online]. Available: <http://www.nationalreview.com/planet-gore/18278/blood-oil-trade-congress-can-get-behind/sterling-burnett> [Accessed 07/11/2011].
- Bush, G. W. 2007a. *State of the Union 2007* [Online]. Available: <http://georgewbush-whitehouse.archives.gov/news/releases/2007/01/20070123-2.html> [Accessed 30/11/2012].
- Bush, G. W. 2007b. *Twenty in Ten* [Online]. Available: <http://georgewbush-whitehouse.archives.gov/stateoftheunion/2007/initiatives/energy.html> [Accessed 13/02/2012].

- Byrne, R. 2003. *Life in the Slow Lane* [Online]. Cambridge, MA: Union of Concerned Scientists. Available: http://www.ucsusa.org/clean_vehicles/vehicle_impacts/cars_pickups_and_suv/s-life-in-the-slow-lane.html [Accessed].
- Canis, B. & Yacobucci, B. 2010. *The U.S. Motor Vehicle Industry: Confronting a New Dynamic in the Global Economy*. Washington D.C.: Congressional Research Service.
- Card, A. 1995. Prepared Testimony of Andrew H. Card, President and CEO American Automobile Manufacturers Association before Committee on Commerce Subcommittee on Energy and Power US House of Representatives. *Federal News Service*, 24/07/1995.
- Carlarne, C. P. 2010. *Climate Change Law and Policy: EU and US Approaches*, Oxford, Oxford University Press.
- Carlson, A. 2009. Iterative Federalism and Climate Change. *Northwestern University Law Review*, 103, 1097-1162.
- Carnahan, R. 2005. Improving the Nation's Energy Security: Can Cars and Trucks Be Made More Fuel Efficient? *Hearing by the House Committee on Science*. Washington D.C.: Government Printing Office.
- Casper, B. M. 2000. *Lost in Washington: Finding the Way Back to Democracy in America*, USA, University of Massachusetts Press.
- CEI. 1994. *The Human Cost of Regulation: Reframing the Debate on Risk Management* [Online]. University of California. Available: <http://legacy.library.ucsf.edu/tid/dwt22d00> [Accessed 09/11/2011].
- CEI. 1998. *Competitive Enterprise Institute Donation Form* [Online]. Available: <http://legacy.library.ucsf.edu/tid/jot72e00;jsessionid=7E2A7861D7A82ABD31915E61BE83AD96.tobacco03> [Accessed 16/11/2011].
- Center for Biological Diversity. 2008. *Comments In Response To The Notice Of Proposed Rulemaking For Average Fuel Economy Standards, Passenger Cars And Light Trucks; Model Years 2011-2015* [Online]. Available: <http://www.regulations.gov/#!documentDetail;D=NHTSA-2008-0089-0222> [Accessed 15/02/2012].
- Center for Biological Diversity. 2009. *Lawsuit Challenges Obama Fuel Economy Standards* [Online]. Available: http://www.biologicaldiversity.org/news/press_releases/2009/cafe-standards-04-02-2009.html [Accessed 13/02/2012].
- Center for Responsive Politics. 2007a. *Expenditure - General Motors 2007* [Online]. Available: <http://www.opensecrets.org/lobby/clientsum.php?id=D000000155&year=2007> [Accessed 03/12/2011].
- Center for Responsive Politics. 2007b. *Ford 2007 Expenditure* [Online]. Available: <http://www.opensecrets.org/lobby/clientsum.php?id=D000000182&year=2007> [Accessed 03/12/2011].

- Center for Responsive Politics. 2007c. *Ford 2007 Lobbyists* [Online]. Available: <http://www.opensecrets.org/lobby/clientlbs.php?id=D000000182&year=2007> [Accessed 01/12/2011].
- Center for Responsive Politics. 2007d. *General Motors 2007 Lobbyists* [Online]. Available: <http://www.opensecrets.org/lobby/clientlbs.php?id=D000000155&year=2007> [Accessed 01/12/2011].
- Center for Responsive Politics. 2011. *John Dingell 2004 Summary* [Online]. Available: <http://www.opensecrets.org/politicians/summary.php?cid=N00001783&cycle=2004> [Accessed 24/11/2011].
- Claybrook, J. 2010. *Toyota Gas Pedals: Is the Public at Risk? Hearing by the House Committee on Oversight and Government Reform*. Washington D.C.: Government Printing Office.
- Coalition for Vehicle Choice. 2001a. *Issue Brief* [Online]. Available: <http://www.vehiclechoice.org/cafe/brief/cafe.html> - accessed through http://lobby.la.psu.edu/023_CAFE_Standards_1/frameset_cafe.html [Accessed 15/02/2012].
- Coalition for Vehicle Choice. 2001b. *Tell your Senators to Protect Vehicle Choice* [Online]. Available: <http://www.vehiclechoice.org/wash/cafetp.html> - accessed through http://lobby.la.psu.edu/107th/126_CAFE_Standards_2/Organizational_Statements/CVC/CVC_Email.htm [Accessed 17/08/2012].
- Congress 2007. Energy Independence and Security Act. *United States Statutes at Large*, 121 STAT. 1492, P.L. 110-140.
- Congressional Record 2007. S15005. Washington D.C.
- Coon, C. 2001. *Why The Government's CAFE Standards For Fuel Efficiency Should Be Repealed, Not Increased*. Washington D.C.: Heritage Foundation.
- Cooney, S. & Yacobucci, B. 2008. *Federal Loans to the Auto Industry Under the Energy Independence and Security Act*. Washington D.C.: Congressional Research Service.
- Crain, K. 2007. *Again, the Industry Pleads for Mercy*. *Automotive News*, 25/06/2007.
- Crandall, R. & Graham, J. 1989. *The Effect of Fuel Economy Standards on Automobile Safety*. *Journal of Law and Economics*, 32, 97-118.
- Crandall, R. W. 1992. *Policy Watch: Corporate Average Fuel Economy Standards*. *The Journal of Economic Perspectives*, 6, 171-180.
- Crotty, J. 2000. *Structural Contradictions of the Global Neoliberal Regime*. *Review of Radical Political Economics*, 32, 361-368.
- Dalmia, S. & Payne, H. 2007. *Dingell Bells; Congressional Democrats's Christmas gift for U.S. automakers*. *The Weekly Standard*, 31/12/2007.
- Davis, S. C. & Truett, L. F. 2000. *An Analysis of the Impact of Sport Utility Vehicles in the United States*. Oak Ridge, Tennessee: Oak Ridge National Laboratory.

- Davis, T. 2001. Corporate Average Fuel Economy (CAFE) Reform. *Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Department of Transport. 2009. *Statement from the U.S. Department of Transportation* [Online]. Available: <http://www.dot.gov/affairs/dot0109.htm> [Accessed 13/02/2012].
- Domenici, P. 2003. Energy Policy Act of 2003. *Congressional Record*. Washington D.C.: Government Printing Office.
- Doniger, D. 2007. The Implications of the Supreme Court's Decision Regarding EPA's Authorities with Respect to Greenhouse Gases Under the Clean Air Act. *Hearing by the Senate Committee on Environment and Public Works*. Washington D.C.: Government Printing Office.
- Dunn, J. A. 2006. Automobile Fuel Efficiency Policy: Beyond the CAFE Controversy. In: Repetto, R. (ed.) *Punctuated Equilibrium and the Dynamics of U.S. Environmental Policy*. New Haven: Yale University Press.
- Durbin, D. 2007. Creating Long-Term Energy Alternatives For The Nation Act Of 2007. *Congressional Record*. Washington D.C.: Government Printing Office.
- Duvall, T. 2008. \$4 Gasoline and Fuel Economy: Auto Industry at a Crossroads. *Hearing by the Select Committee on Energy Independence and Global Warming*. Washington D.C.: Government Printing Office.
- Eilperin, J. 2001. U.S. May Demand More SUV Miles Per Gallon. *The Washington Post*, 22/06/2001.
- Energy Washington Week. 2009. Obama Order On California GHG Waiver Prompts Auto Industry Talks. 04/02/2009.
- Evans, L. 1984. Driver Fatalities Versus Car Mass Using A New Exposure Approach. *Accident Analysis & Prevention*, 16, 19-36.
- Evans, L. 2002. *Does CAFE Kill?* [Online]. Available: <http://cei.org/outreach-regulatory-comments-and-testimony/does-cafe-kill-oral-remarks-dr-leonard-evans> [Accessed 8/11/2011].
- Fisher, L. 2005. Legislative Vetoes After Chadha. Washington D.C.: Congressional Research Service.
- Ford. 2003. *Ford Motor Company - Fuel Economy* [16/04/2003 capture from archive.org] [Online]. Available: <http://web.archive.org/web/20030416182041/http://www.ford.com/en/company/about/publicPolicy/fuelEconomy.htm> [Accessed 19/11/2011].
- Ford. 2007. *Automakers, UAW, and Greater Chicago Leaders Unite in Support of Raising Vehicle Fuel Economy Standards* [Online]. Available: http://media.ford.com/article_display.cfm?article_id=26559 [Accessed 31/01/2012].
- Friedman, T. 2008. How to Fix a Flat. *The New York Times*, 11/11/2008.
- Gartman, D. 1994. *Auto Opium: A Social History of American Automobile Design*, New York, Routledge.

- Government Accountability Office 2000. Automobile Fuel Economy. Washington D.C.: Government Accountability Office.
- Government Accountability Office 2003. Energy Task Force: Process Used to Develop the National Energy Policy. Washington D.C.: Government Accountability Office.
- Government Accountability Office 2010. Vehicle Fuel Economy. Washington D.C.: Government Accountability Office.
- Graham, J. D. 1992. The Safety Risks of Proposed Fuel Economy Legislation. *Risk*, 3, 95-126.
- Greene, D. 1998. Why CAFE Worked. *Energy Policy*, 26, 595-613.
- Greene, D. 2005. Costs of US Oil Dependence: 2005 Update. Oak Ridge: Department of Energy.
- Greene, D. & Tishchishyna, N. 2000. Costs of Oil Dependence: 2000 Update. Oak Ridge: Department of Energy.
- Gunster, S. 2005. 'You Belong Outside': Advertising, Nature, and the SUV. *Ethics & the Environment*, 9, 4-32.
- Hall, J. 2008. \$4 Gasoline and Fuel Economy: Auto Industry at a Crossroads. *Hearing by the Select Committee on Energy Independence and Global Warming*. Washington D.C.: Government Printing Office.
- Held, D. & McGrew, A. 2003. *The Global Transformations Reader*, Cambridge, Polity Press.
- Himelfarb, R. & Perotti, R. 2004. *Principle Over Politics?: The Domestic Policy of the George H.W. Bush Presidency*, Westport, CT, Praeger Publishers.
- Hyde, J. 2007. Fuel Economy: A Costly Battle. *Detroit Free Press*, 17/08/2007.
- Inside Energy. 2007. Levin seeks clarity on CAFE provision. *Inside Energy*, 17/12/2007.
- Inslee, J. 2008. \$4 Gasoline and Fuel Economy: Auto Industry at a Crossroads. *Hearing by the Select Committee on Energy Independence and Global Warming*. Washington D.C.: Government Printing Office.
- Insurance Institute for Highway Safety. 2013. *About the Insurance Institute for Highway Safety* [Online]. Available: <http://www.iihs.org/about.html> [Accessed 09/04/2013].
- Karey, G. 2008. NHTSA said to under-estimate prices of fuel in figuring new CAFE standards. *Inside Energy*, 07/07/2008.
- Kazman, S. 2007. *First, Do No Harm to Motorists* [Online]. Available: <http://cei.org/studies-point/first-do-no-harm-motorists> [Accessed 07/11/2011].
- Kerry, J. 2001. Corporate Average Fuel Economy (CAFE) Reform. *Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Kildee, D. 2011. *Congressional Auto Caucus* [Online]. Available: <http://kildee.house.gov/about/auto-caucus.shtml> [Accessed 30/11/2011].

- Kindy, K. 2010. Automotive Industry, Regulators "too cozy". *The Washington Post*, 09/04/2010.
- Kirby, E. G. 1995. An Evaluation of the Effectiveness of US CAFE policy. *Energy Policy*, 23, 107-109.
- Kleit, A. 1990. The Effect of Annual Changes in Automobile Fuel Economy Standards. *Journal of Regulatory Economics*, 2, 151-172.
- Kratochwil, F. 2006. On Legitimacy. *International Relations*, 20, 302-308.
- Lancaster, J. 2002. Debate on Fuel Economy Turns Emotional. *The Washington Post*, 10/03/2002.
- Levin, C. 2002. National Laboratories Partnership Improvement Act of 2001. *Congressional Record*, 12/03/2002.
- Levin, C. 2007a. *American Manufacturing Initiative* [Online]. Available: <http://levin.senate.gov/newsroom/press/release/?id=184e1359-1935-47e1-ae94-9fb61ab5c318> [Accessed 12/01/2012].
- Levin, C. 2007b. Energy Independence And Security Act Of 2007. *Congressional Record*. Washington D.C.: Government Printing Office.
- Levin, C. 2008. *Senator Levin Auto Task Force and Caucus* [Online]. Available: <http://web.archive.org/web/20080216114156/http://levin.senate.gov/senate/autos/index.html> [Accessed 11/01/2012].
- Lindblom, C. E. & Woodhouse, E. J. 1993. *The Policy-Making Process*, New Jersey, Prentice Hall.
- Luger, S. 2000. *Corporate Power, American Democracy, and the Automobile Industry*, Cambridge, Cambridge University Press.
- Marr, K. & Montgomery, L. 2008. Lifeline for Automakers Dangles Just Out of Reach. *The Washington Post*, 22/10/2008.
- Master, M. 2007. Got an Issue? Congress has your Caucus. *The Hill*, 28/11/2007.
- Masur, J. S. & Posner, E. A. 2011. Climate Regulation and The Limits of Cost-Benefit Analysis. *California Law Review*, 99, 1557-1599.
- Maynard, M. 2007. Automakers Change Course on Fuel Standards. *The New York Times*, 07/12/2007.
- McKinnon, A. C. 1999. A Logistical Perspective on the Fuel Efficiency of Road Freight Transport. *Improving Fuel Efficiency in Road Transport*. Paris: International Energy Agency.
- Miller, C. 2007. Auto Workers Are Americans Whose Jobs Are Worth Protecting. *Congressional Record*. Washington D.C.: Government Printing Office.
- Miller, C. 2008. \$4 Gasoline and Fuel Economy: Auto Industry at a Crossroads. *Hearing by the Select Committee on Energy Independence and Global Warming*. Washington D.C.: Government Printing Office.
- Moore, R. T., Powell, E. N. & Reeves, A. 2012. Driving Support: Workers, PACs, and Congressional Support of the Auto Industry. <http://www.eleanorneffpowell.com/uploads/8/3/9/3/8393347/autos.pdf>.

- Moore, T. G. 1991. Central Planning USA-style: The Case Against Corporate Average Fuel Economy (CAFE) standards. Stanford University: Hoover Institution.
- National Academy of Sciences 2002. *Effectiveness and Impact of Corporate Average Fuel Economy Standards*, Washington D.C., National Academy Press.
- National Energy Policy Development Group 2001. *National Energy Policy*, Washington D.C., Government Printing Office.
- NHTSA 2002a. Light Truck Fuel Economy MY2005-2007 Proposed Rulemaking. *Federal Register*. Washington D.C.: Government Printing Office.
- NHTSA 2002b. Light Truck Fuel Economy MY2005-2007 Final Rule. *Federal Register*. Washington D.C.: Government Printing Office.
- NHTSA 2003. Light Truck Average Fuel Economy Standards Model Years 2005-2007 Final Rule. *Federal Register*. Washington D.C.: Government Printing Office.
- NHTSA 2008. Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011–2015; Proposed Rule. *Federal Register*. Washington D.C.: Government Printing Office.
- Office of Public Records. 2007a. *Lobbying Report: Duberstein and GM* [Online]. Washington D.C. Available: <http://soprweb.senate.gov/index.cfm?event=getFilingDetails&filingID=33f768f6-bb0e-4272-bc39-9cc1f1b87651> [Accessed 01/12/2011].
- Office of Public Records. 2007b. *Lobbying Report: Fierce, Isakowitz & Blalock and Ford* [Online]. Washington D.C. Available: <http://soprweb.senate.gov/index.cfm?event=getFilingDetails&filingID=42bf580c-7c87-4320-8701-05ad4453c2ff> [Accessed 01/12/2011].
- Peters, E. 2007. *No to New Fuel Economy Standards: Consumer Choice, Not Congress, Should Drive Detroit's Decisionmaking* [Online]. Available: http://www.nationalcenter.org/NPA556_Fuel_Economy_Markey_Platts.html [Accessed 15/02/2012].
- PEW. 2012. *Driving to 54.5 MPG* [Online]. Available: http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Fact_Sheet/FactSheet%20Graphic%20Fuel%20Efficiency%20Timeline%20FINALSept%202012.pdf [Accessed 30/10/2012].
- Pfotenhauer, N. M. 2002. Fatal Politics; When Car Fuel Standards Put Lives at Risk. *The Washington Times*, 22/02/2002.
- Public Citizen. 2001a. *Graham Put on Notice by Senate to Protect Public Health, Safety and the Environment* [Online]. Available: <http://www.citizen.org/congress/regulations/graham.html> [Accessed 08/03/2013].
- Public Citizen. 2001b. *Nomination of Graham Opposed by Fifty-three Academics* [Online]. Available: <http://www.citizen.org/congress/regulations/graham/academics.html> [Accessed 08/03/2013].

- Public Citizen. 2005. *Comments on Proposed Rulemaking* [Online]. Available: www.citizen.org/documents/2005_FE_Comments.pdf [Accessed 22/11/2011].
- Rendell, E. 2008. *Governor Rendell Expresses Disappointment at Bush Administration's Latest Effort to Impede Greenhouse Gas Reductions Criticizing NHTSA Proposed Rulemaking* [Online]. Available: <http://www.reuters.com/article/2008/04/25/idUS198443+25-Apr-2008+PRN20080425> [Accessed 09/02/2013].
- Repetto, R. 2006. *Punctuated Equilibrium and the Dynamics of U.S. Environmental Policy*, New Haven, Yale University Press.
- Rowell, A. 1996. *Green Backlash: Global Subversion of the Environmental Movement*, London, Routledge.
- Rutledge, I. 2005. *Addicted to Oil: America's Relentless Drive for Energy Security*, London, I.B. Taurus.
- Scharpf, F. W. 1997. Economic Integration, Democracy and the Welfare State. *Journal of European Public Policy*, 4, 18-36.
- Shanahan, J. & Wilson, M. 1995. *Using Appropriations Riders to Curb Regulatory Excess* [Online]. Available: <http://www.heritage.org/research/reports/1995/10/using-appropriations-riders-to-curb-regulatory-excess> [Accessed 30/10/2012].
- Sinden, A., Kysar, D. A. & Driesen, D. M. 2009. Cost–Benefit Analysis: New Foundations on Shifting Sand. *Regulation & Governance*, 3, 48-71.
- Singh, A. 2012. Bankrupt: An Ethical Analysis of the 2009 Auto Bailout. *Intersect: The Stanford Journal of Science, Technology and Society*, 5, 1-10.
- Sivak, M. & Tsimhoni, O. 2009. Fuel Efficiency of Vehicles on US roads: 1923-2006. *Energy Policy*, 37, 3168-3170.
- Small, K. & Van Dender, K. 2007. Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect. *Energy Journal*, 28, 25-51.
- Smart, K. 2000. Losing Ground: How SUVs Are Making the United States Less Fuel-Efficient and Options for Reversing the Downward Trend. *Environmental Law*, 7, 159-183.
- Taylor, J. 1991. *Smaller Cars Can Save Fuel But Cost Lives* [Online]. CATO Institute. Available: http://www.cato.org/pub_display.php?pub_id=5637/ [Accessed 01/11/2011].
- The Washington Times. 2012. *Saving Gas, Wasting Lives* [Online]. Available: <http://www.washingtontimes.com/news/2012/sep/14/saving-gas-wasting-lives/> [Accessed 07/02/2013].
- US Fed News. 2007. Sen. Stabenow issues statement on energy bill vote. *US Fed News*, 13/12/2007.
- Vanderheiden, S. 2006. Assessing the Case against the SUV. *Environmental Politics*, 15, 23-40.
- Vogel, D. 1997. *Trading up: Consumer and Environmental Regulation in a Global Economy*, Cambridge, MA, Harvard University Press.

- Whitehouse.gov. 2006. *CAFE Factsheet* [Online]. Available: <http://georgewbush-whitehouse.archives.gov/news/releases/2006/04/20060428-9.html> [Accessed 21/06/2010].
- Yacobucci, B. & Bamberger, R. 2007a. Automobile and Light Truck Fuel Economy: The CAFE Standards. Washington D.C.: Congressional Research Service.
- Yacobucci, B. & Bamberger, R. 2007b. Corporate Average Fuel Economy (CAFE): A Comparison of Selected Legislation in the 110th Congress. Washington D.C.: Congressional Research Service.
- York, R. 2006. Ecological Paradoxes: William Stanley Jevons and the Paperless Office. *Human Ecology Review*, 13, 143-147.
- Zagaroli, L. 2002. Critics: Agency Must Change how it Works. *The Detroit News*, 06/02/2002.

Chapter 6 – Hydrogen Dreams: The FreedomCAR Partnership

“Hydrogen fuel cells represent one of the most encouraging, innovative technologies of our era. And if you’re interested in our environment and if you’re interested in doing what’s right for the American people, if you’re tired of the same old endless struggles that seem to produce nothing but noise and high bills, let us promote hydrogen fuel cells as a way to advance into the 21st century.”

President George W. Bush (2003a p.162)

Hydrogen fuel cell technology research was pursued by the George W. Bush administration as a way to move America away from its situation of oil dependence into a clean energy, post-petroleum future (Congress, 2003 p.3). Primarily, Bush promoted hydrogen fuel cells through the Freedom Co-operative Automotive Research (FreedomCAR) partnership, which saw the government partner a number of corporations in directing and producing research. FreedomCAR directly replaced Clinton’s hybrid-vehicle-focused Partnership for a New Generation of Vehicles (PNGV). Unlike CAFE and PNGV, which could only lessen US oil dependence, FreedomCAR was ultimately intended to completely eliminate US oil dependence by shifting the main automotive fuel from gasoline/diesel to hydrogen and creating a hydrogen economy.

However, the FreedomCAR partnership was very poorly positioned to actually help US oil dependence in the long term because of the inappropriateness of the technology. In the short term, FreedomCAR may have even worsened US oil dependence by drawing attention away from small incremental changes that were possible in the present, such as CAFE, and from technologies with immediate payoffs, such as hybrids. One of the main reasons FreedomCAR was so poorly positioned to help oil dependence is that the partnership was attentive more to corporate interests than to achieving its professed goal.

As such, this chapter explains the extent and methods of the influence of major corporations in the formulation, execution and outcomes of the FreedomCAR partnership, and explores the consequent capacity of the partnership to deal with oil dependence. In order to do so, the first section of this chapter gives the technological

and historical background to hydrogen fuel cell policy and covers the possible benefits, and problems, with a hydrogen system. The second section considers the FreedomCAR partnership directly; looking first at its predecessor – the Partnership for a New Generation of Vehicles – before considering how the FreedomCAR partnership was created, what goals the partnership was set and how the partnership operated. The third section explores what the FreedomCAR partnership has achieved, what it is ultimately able to achieve and its impact on oil dependence. Finally, this chapter summarises its contents and offers conclusions.

Like in the previous chapter, the evolution of the policy is explored for the mechanisms of influence identified in chapter three. However, the particular mechanisms discussed in this case study are somewhat different because FreedomCAR policy evolution took place in different arenas than CAFE standards. In this chapter, for instance, production decisions taken by the automakers, the expansion of private authority, and direct negotiation with the government are major sources of the corporations' capacity to realise their interests; visible power is much more prevalent in this case study than in CAFE, where many more hidden power mechanisms were seen. By exploring the power of corporations in the creation and workings of a public-private partnership that had little congressional oversight, this chapter adds to the previous chapter and jointly show a broad picture of some of the locations within the political system that corporate power can operate in. As such, this chapter plays an important role in helping to understand, in contrast to the majority of interest group literature, corporate power outside of Congress and outside of the more observable parts of the political arena.

Background

Technological Background

Hydrogen is the most abundant element in the universe and the lightest, and smallest, element in the periodic table. Combustible at room temperature, there is a long history of research into utilising hydrogen as an automotive fuel. Research into hydrogen has explored two main methods of using hydrogen as a fuel for automobiles – burning it in an internal combustion engine (ICE), or using it in a fuel cell to produce electricity that powers an electric engine. While there has been some interest in the hydrogen ICE – particularly by BMW and Mazda – the main research

focus has been on improving fuel cells for vehicles and, indeed, improvements to fuel cells were the main aim of the FreedomCAR partnership.

Hydrogen fuel cells have a long history. The invention of the fuel cell can be traced to Christian Friedrich Schonbein, who uncovered the principles underlying fuel cells in 1838, and William Grove, who made the first working model in 1839 (Hoffmann, 2002 ch.7). While there are several different configurations of fuel cells, FreedomCAR was specifically based on improving the proton exchange membrane (PEM) fuel cell. A PEM hydrogen fuel cell consists of a PEM that separates an anode made of platinum from a cathode. It works by the hydrogen entering the cell at the anode, where the platinum works to catalyse a reaction that splits the hydrogen into negatively-charged electrons and positively-charged hydrogen protons. While both the hydrogen protons and electrons are drawn to the cathode, the PEM only allows the protons to travel to the cathode. Instead, to reach the cathode, the electrons flow round an external circuit (i.e. a current is produced), where they power attached devices (an engine in the case of a vehicle). At the cathode, oxygen from air is catalysed and combines both with the hydrogen protons and electrons, producing water and some heat. As each fuel cell only produces a low voltage in order to produce sufficient energy to power a vehicle they are stacked together in a series.

HFCs, then, operate as a generator of electricity – you put fuel in, you get energy out. In this role, HFCs have been used for a wide variety of applications – as back-up generators in hospitals, for example – and have the potential for use in many more situations. Most notably, hydrogen fuel cells were used as a source of energy – and drinking water – in the Apollo and Gemini missions (Foley, 2001 p.16). When used for vehicles, HFCs operate in much the same way as a battery in that they work as a source of electrical energy used to power an electric motor. There is, in fact, a broad degree of cross compatibility between the technology within a hydrogen fuel cell car and an entirely electric car because in a HFC vehicle, with the exception of the fuel cell and fuel tank, all the components are electrical. Hence, hydrogen fuel cell vehicles can be classed as a form of electric car.⁶⁶

⁶⁶ Interview with Congressional Staffer, 9th June 2011.

There are two main advantages of a hydrogen economy and HFC cars. The first advantage is that hydrogen is politically uncontrollable. Unlike oil, hydrogen cannot be controlled by a small group of nations because it is not located within a small geographical territory. In fact, there are no reserves of pure hydrogen on Earth (Holland and Provenzano, 2008 p.12). Instead of tapping such reserves for use in HFCs and a hydrogen economy hydrogen has to be produced using other sources of energy. As such, hydrogen is not a source of energy it is an energy carrier (Romm, 2004 p.x) – much like electricity – and can be produced anywhere in the world. The second advantage is that “cars that run on hydrogen fuel produce only water, not exhaust fumes” (Bush, 2003a p.162). A move to hydrogen, then, would see an improvement in the health of citizens – particularly inner city residents – as emissions of gasoline-based exhaust, and the pollutants contained in that exhaust, are eliminated. Furthermore, hydrogen, if produced from renewable energy sources, would also eliminate CO₂ emissions and substantially reduce the American contribution to global warming (Scott and Hafele, 1990).

However, despite the potential for a hydrogen economy to provide an emission-free and post-fossil system, a hydrogen economy needs to overcome a series of issues to realise these advantages. The first issue is that, because hydrogen is an energy carrier rather than an energy source, other fuels must be used to produce hydrogen. Currently, there are two main ways in which hydrogen is produced: reforming of natural gas or electrolysis of water (Little, 2002). Reforming natural gas, which is the current dominant method of producing hydrogen, unavoidably produces CO₂ emissions, utilises fossil fuels and, in the process, loses some of the energy contained within the gas. In contrast, electrolysis of water can be emission-free, but only if the source of the electricity is renewable. As only 14.3% of US electricity is currently renewably created, to manufacture emission-free and post-fossil hydrogen requires a massive switch to the use of renewables in the electricity production system. Furthermore, because producing hydrogen would entail an increased demand for electricity, a large increase in the size and production capacity of the electricity production system would also have to occur for a hydrogen economy to realise its potential benefits.

Second, the implementation of HFC cars would require the overhaul of the entire gasoline-distribution infrastructure and of the privately-owned vehicle stock. This

overhaul would require a substantial investment of resources that, for the majority of the investment, must come from individuals and companies. This second issue has been labelled the “chicken and egg” problem in that there is an issue as to what comes first – the infrastructure to fuel the cars and allow them to run, or the HFC car owners who would buy the fuel to make the creation of the infrastructure worthwhile. As neither companies nor individuals would be willing to spend their money on infrastructure that they are unable to use or profit from extensive government intervention would be required. Moreover, unlike existing gasoline infrastructure, which evolved slowly and spread over a century, this hydrogen infrastructure would have to be built very quickly (Pfeffier, 2006) to compete with the gasoline infrastructure in terms of scope of coverage, cost and convenience.

Third, the cost of hydrogen vehicle technology is very high, particularly in comparison to oil-based technologies. As a replacement technology in a market system, hydrogen vehicle technology needs to be cost-competitive with gasoline-ICE technology so that the average consumer would be willing to purchase it. However, ICE technology has had a century to bring costs down and so the cost of HFC vehicles is very high, comparatively speaking. While the cost is not often publically revealed, in 2002 Honda’s lead fuel cell engineer said that it would take at least ten years to bring the sticker price of a HFC vehicle down to \$100,000 (Dawson, 2002). Likewise, Geoffrey Ballard, founder of Ballard Systems – a leading fuel cell company – said that “The family-owned, garaged vehicle is the last vehicle that’s going to get a fuel cell. Fuel cells are still 30 times the cost of what they need to be for the automotive market” (as quoted in Romm, 2004 p.189).

Finally, it is relatively hard to contain, transport and store hydrogen because it is the smallest atom on the periodic table, is a gas over a wide range of temperatures⁶⁷ and is very reactive. The small size and reactivity of hydrogen means that it embrittles, weakens and can fracture many metals over time (particularly high-strength ones (Campbell, 2003)) as the hydrogen atoms can diffuse through the metal and combine with the metal to form hydrides within the metal. The diffusion of hydrogen atoms through metal also means that the amount of stored hydrogen can decrease over time. Additionally, due to its small size and gaseous form, hydrogen has a far lower energy density than natural gas or gasoline and so, to contain the

⁶⁷ It becomes a liquid at -253 degrees Celsius, which is 20 degrees above absolute zero.

same amount of energy within a fuel tank requires either a substantially larger fuel tank or the pressurisation of hydrogen⁶⁸, with pressurisation requiring further energy (and cost) expenditure on top of the production of hydrogen.

As such, research into hydrogen and HFCs has sought to overcome many and varying technical problems, particularly regarding costs and storage. Nevertheless, while hydrogen may have the potential to be a panacea for many societal problems, significant uncertainties exist about the potential solutions to the technical problems, the timeframe for overcoming these problems and the timeframe for commercialisation of hydrogen technology. Indeed, “although fuel cells seem like a twenty-first-century marvel, they are a nineteenth-century invention” (Romm, 2004 p.35) that is not currently competitive with alternative technologies despite two hundred years of research.

Policy History

Apart from some military experiments with hydrogen as a fuel, the US government and the US auto companies were not interested in hydrogen research until after the 1973 oil shock (Foley, 2001 p.15). The events of 1973 provided the impetus to consider alternatives to gasoline and fossil fuels more generally. Optimism about the potential for a hydrogen economy was high and it began to register in the political world, with President Carter’s inauguration parade involving a hydrogen-ICE Cadillac. Federal research money, following Europe and Japan’s lead, began to flow towards exploring a new hydrogen economy – with \$24 million budgeted for hydrogen research by the US government in 1978 (Hoffmann, 2002 p.42).

Yet this period proved to be a false dawn of a hydrogen age. Initial expectations of hydrogen’s implementation timeline were not met. Moreover, with the initial optimism in the research community fading and with the price of oil dropping, governments started decreasing funding for research. In the US the decrease was particularly sharp as the Reagan administration, in part of a wider move placing renewable energy and environmental concerns on the back burner, slashed hydrogen research budgets (Hoffmann, 2002 p.45). Hydrogen funding continued to decline through the 1980s, despite repeated attempts by Representative George Brown (D-CA) and Senator Spark Matsunaga (D-HI) to pass a hydrogen research bill. The low point in

⁶⁸ Other method for increasing the energy density, and allowing the storage, of hydrogen, such as metal hydrides, are currently in the experimental research stage.

hydrogen research funding was reached in financial year 1988, when the Department of Energy's (DOE) hydrogen research budget was a mere \$1 million.

However, the Spark M. Matsunaga Hydrogen Research Development and Demonstration Act of 1990, named in his honour after his death, established greater funding for hydrogen research. In 1992 it authorised \$3 million, in 1993 \$7 million and in 1994 \$10 million (Cannon, 1994 p.907). About half of the funds within these years were dedicated to researching materials and methods for storing hydrogen. The Matsunaga act also established the Hydrogen Technical Advisory Panel (HTAP), whose purpose was to evaluate the research progress of hydrogen technology and advise, and make recommendations to, the Secretary of Energy (HTAP, 1999 p.7). The Matsunaga act was followed by the 1996 Hydrogen Future Act, which further increased funding by \$5 million per year, to a 2001 total of \$40 million (Congress, 1996). It was around this time that some automakers started paying greater attention to hydrogen research, with a 1997 newspaper article noting "Chrysler, GM, Toyota and Mercedes-Benz are the heavy hitters" (Tuckey, 1997). The Hydrogen Future Act also required the Secretary of Energy (in effect, HTAP (Department of Energy, 2011)) to produce a report to Congress on the status, progress and potential of the existing hydrogen research policy by 1999. This 1999 Congressional Report was highly optimistic about hydrogen's near-term prospects, claiming that "the automobile industry is expected to be producing commercial buses by 2002 and tens of thousands of cars annually by 2004" (Department of Energy, 1999 p.ii); the latter claim seemingly based on GM, which had committed itself to a 2004 deadline for the commercialisation of hydrogen cars (ibid. p.1).

One reason for GM and other automakers moving towards hydrogen was California's Air Resource Board's (CARB) Zero Emission Vehicle (ZEV) mandate. Part of an effort to reduce air pollution, and using California's special provisions under the Clean Air Act, the aggressive 1990 mandate required the major carmakers to sell an increasing percentage of ZEVs – starting at 2% (of the 1992 total of 1.2 million) in 1998 and up to 10% in 2003 (Larrue, 2003 p.6). Failure to meet the required number would be met with a \$5,000 fine per vehicle below their quota (Collantes, 2006 p.23). The Clean Air Act's provision also allowed other state to adopt California's standards, nine of which voluntarily did and three, having existing laws that linked their clean air standards to California's, automatically did. The three states who automatically

adopted the mandate – Massachusetts, New York and Vermont – combined with California accounted for 18% of the US automotive market in 2000 (Larrue, 2003 p.6).

Not happy with the mandate (Collantes, 2006 p.93), the US and Japanese automakers repeatedly lobbied against it at CARB's biennial reviews of the program (Brown, 2001 p.59). Indeed "major players in the auto and oil industries lobbied aggressively against the mandate from its inception, going so far as to publicize inflated EV price quotes to stimulate public opposition to the mandate" (ibid. p.59). In 1996 they successfully argued that the technology was not advanced enough to meet a 2% sale requirement. Despite public opposition to changing the mandate, CARB discarded the 1998 figure. In its place would be a public demonstration program of ZEVs and a requirement to create ZEVs in line with public demand, although the 2003 10% requirement remained. These new "market-based" (Larrue, 2003 p.13) requirements were established in confidential memoranda of agreement that were negotiated by CARB with each automaker. The spin-off of this approach was that the twelve other states that had adopted California's clean air regulation could no longer enforce the old requirements, and could not enact the new requirements as they were done informally and outside the Clean Air Act.

The public demonstration program saw the automakers try to satisfy the ZEV mandate in California with battery-electric vehicles; producing and leasing 5,000 electric cars between them. However, two interlinked arguments soon became prominent in the automakers protestations about the ZEV mandate and having to fulfil it with electric cars. First, automakers claimed that the technology was not yet sufficiently developed, reflected in the 100-mile range of most of the cars and the 30 per cent greater cost than conventional cars (Mann, 2000). Second, in light of these problems, automakers argued that public demand was non-existent and that CARB was trying to get the automakers to do the impossible – to sell something no-one wanted to buy. Such arguments pushed CARB to further reconsider its policy and its view of battery technology.

At the same time as CARB was reconsidering its ZEV mandate, it set up, with the California Energy Commission and six private business – DaimlerChrysler, Ford Motor Company, BP, Shell Hydrogen, ChevronTexaco and Ballard Power Systems – the California Fuel Cell Partnership (CaFCP). By 2000 this partnership had

expanded to include GM, Toyota, Honda, Nissan, Volkswagen and Hyundai. The CaFCP sought to promote hydrogen technology and started to build hydrogen fuelling stations in California in 1999. So, when Bush came to power, California was pushing non-oil vehicle technologies and, due to continuing problems with battery electrics, was also displaying increased interest in hydrogen fuel cell vehicles.

Alongside California's ZEV mandate and the Matsunga funds was a more general vehicle technologies program that also, but not primarily, researched HFCs for transport. On the 29th September 1993, President Clinton and the CEOs of the Big Three automakers announced the Partnership for a New Generation of Vehicles (PNGV). PNGV formally operated as a partnership between the federal government (including eight executive agencies), and the US Council for Automotive Research (USCAR, a company set up by Chrysler, Ford and GM that facilitates co-operation and joint research). The PNGV was established with three main goals. The first goal was to improve manufacturing techniques so as to minimize costs, improve productivity, reduce environmental impacts and improve product quality. The second goal was to incorporate already developed and developing technologies within commercially-available vehicles. The third goal, which received the most press, was the goal of creating a "supercar" family sedan that would run at three times the mpg of the 1994 average sedan, which had been 26.6 mpg. This third goal had a timeline of identifying the most fruitful technology by 1997, building a concept car by 2000 and a production prototype by 2004. Commercial production was assumed to take place 3 to 5 years after the production prototype, although no concrete requirement for the production of vehicles was included.

The Partnership was headed by Vice President Al Gore and operated by both the corporations and government funding research at the National Laboratories and Universities, with the corporations also conducting some research in-house. There was a notional 50/50 split on research funding between the corporations and government, although the split was not monitored (Wells, 2002 p.1). On the government side, funding for the PNGV came from "channelling existing funding" (Kildee, 2000 H4439) from a number of government agencies – Department of Commerce, DOE, DOT, EPA and National Science Foundation (Yacobucci, 2003 p.2) – rather than being a new request from Congress. While the most fruitful technology identified by the PNGV for building the supercars was diesel hybrid ICEs, PNGV also

contained government funding – amounting to \$33 million (26% of the annual total) in FY1999 (Dicks, 2000 H4441) for hydrogen fuel cells.

The forming of the partnership was largely motivated, on both sides, by previous attempts at government regulation of the auto industry. So, “the primary motivation of the [automotive] industry was to avoid federally mandated fuel efficiency and emissions standards” (Chapman, 1998 p.9) and to sidestep regulatory issues by utilising leapfrog technology to make regulations moot (Wald, 1993). On the administrative side, having seen the fractious relationship that previous administrations had with the automotive industry and the political power exercised by the automotive industry, there was an attempt to replace “lawyers with engineers” (Wald, 1993) by President Clinton. The desire to transform the relationship between the automakers and the government can be seen in President Clinton announcing that the PNGV

“represents a major step in breaking down the decades of mistrust between the federal government and the Big 3 over fuel economy, emissions, and safety issues. Whether a new car is invented or not, the agreement will break down the wasteful gridlock over regulation of the automobile industry” (Gates, 1993).

The PNGV also bolstered Vice President Gore’s environmental credentials and, in its inception, was also supported by environmental groups.

However, by 1997 the Big Three were reluctant to expend resources on developing their concept prototype. Vice-President Al Gore met with the CEOs of the Big Three to discuss why they were dragging their heels (Hais and Winograd, 2009). Their response was that they were making their profits from SUVs, not cars and that PNGV did not reflect this shift in the market. In response, Gore offered not to pursue increased emission standards

“if the car companies would join in expanding the scope of the PNGV plan to include SUVs, the very product they said the marketplace was asking for. Gore suggested each company produce a concept SUV by 2002 and three production prototypes by 2006, capable of getting 80 mpg. He also suggested they advance the mass production goal for cars to 2002 by deploying a 60

mpg five passenger sedan in 2002 rather than waiting for an 80 mpg version in 2004” (ibid.).

Gore’s compromise, however, was rejected, with USCAR instead announcing that "some new technologies that might be specific" to SUVs were now being considered as part of PNGV (Loveless, 1999).

While displaying lukewarm support for PNGV in this instance, autocompanies (and their supporters) would demonstrate their commitment to the partnership when it was threatened in Congress in 2000. The only power Congress had over the partnership was to stop the funding of the partnership. On 14 June 2000, in the FY2001 budget request, members of the House tried to utilise this power by tabling an amendment to redistribute PNGV’s funding. Arguing that PNGV amounted to “corporate welfare” for profitable companies (Sununu, 2000 H4438), House Republicans sought to zero PNGV’s budget (Behrens, 2000). The move was supported by an “unusual” (ibid.) coalition of environmental groups – Ralph Nader groups, Sierra Club and Friends of the Earth – and “fiscally responsible” groups – Citizens against Government Waste and the National Taxpayers Union.

Successful in the House by a narrow margin, the amendment galvanised Dingell and other Michigan Representatives in “leading the effort” to reinstate PNGV funding in the House bill. Likewise, auto companies came out in support of PNGV saying that they were “disappointed” in the decision and that it was based upon “limited information” (Behrens, 2000) and indicating that they had substantially exceeded a 50/50 split in funding, having spent \$980 million a year on “PNGV-related research”.⁶⁹ While the amendment was successful in the House, Senate support for the Partnership meant that funding was reinstated in final conference and PNGV survived (Yacobucci, 2003 p.6).

The FreedomCAR Partnership

“We have a chance to move beyond the environmental debates of the past, debates that centered around regulation and lawsuit -- what I like to call the command and control era of environmental policy, where all wisdom that seemed to emanate out of

⁶⁹ The \$980 million figure, which was echoed in both Congress and the media, was indicated to be “highly subjective” by a National Research Council review of PNGV as most of the funding was spent on the development of “propriety product plans” (National Research Council, 2001, p.10).

Washington, D.C. where things got hamstrung and stuck because lawyers got more involved in the process than the people on the front lines of actually improving our environment. We can move beyond that through technology”

George W. Bush (2003b)

Short Chronology

2001: Bush aims to trim PNGV

2001: Hydrogen fuel cells endorsed in the Cheney report

2002: FreedomCAR – a government partnership with GM, Chrysler and Ford using PNGV funding – announced

2003: FreedomFuel – a government partnership with ExxonMobil, ConocoPhillips, Chevron, BP and Shell Hydrogen – added to FreedomCAR

2004: California shifts focus from electric vehicles to hydrogen vehicles

2004: House Hydrogen and Fuel Cells Caucus formed

2005: First National Academy of Sciences (2005 p.97) study on FreedomCAR reports “it is [not] appropriate or useful at this time to speculate on the probability of this program achieving its long-term vision”

2008: DTE Energy (Detroit) and Southern California Edison added to partnership

2010: Final National Academy of Sciences (2010 p.135) study reports “there remain very formidable barriers to the mass-production of affordable hydrogen and fuel-cell-powered vehicles”

Formulation

While there was some federal interest in hydrogen fuel cell technology when President Bush came to power in 2001 it was not the main priority of government research programmes. Instead, vehicle technology research, in the form of the PNGV, was focused on improving gas-electric hybrid vehicles. Despite having detractors, PNGV was positively viewed in its final NAS review as having overcome “many challenges and [having] forged a useful and productive partnership of industry and government participants” (National Research Council, 2001 p.2). PNGV had partially achieved some of its aims and was also viewed as being on track to achieve

its three stated goals. The first goal, to improve manufacturing processes, saw “a wide array of manufacturing issues [being] addressed” (ibid. p.2) which had reduced costs and improved recyclability of materials (Yacobucci, 2003 p.4). The second goal, to introduce technologies into commercially-available vehicles, had also produced clear outcomes – with greater use of lightweight materials and improved combustion technologies being reported in automaker vehicles (National Research Council, 2001 pp.2-3).

With the third goal, the Big Three had largely succeeded in reaching the 2000 interim goal of producing a concept family sedan that had triple the efficiency of the 1994 average, and were also on target to introduce production prototypes by 2004 (Government Accountability Office, 2000 p.32). GM produced the “Precept” rated at 80 mpg, DaimlerChrysler made the “Dodge ESX3” rated at 72 mpg and Ford created the “Prodigy”, which was rated at 70 mpg (ibid. pp.32-35). These vehicles all maintained “the same emissions and safety standards [as current cars] without sacrificing performance, utility, or affordability” (ibid. p.32). GM also offered a version of the car (the Precept FCEV) that utilised a fuel cell as a “sexy alternative”.⁷⁰ While never put into full production, DaimlerChrysler’s estimated that its ESX3 prototype would have cost \$7,500 more than a conventional car of equivalent size (Mateja, 2000).

However, despite its successes and despite automaker support during possible Congressional cuts, the Bush administration, in consultation with the automakers, quickly moved to redevelop the PNGV, and change the nature of the partnership. On April 9th 2001, the former Michigan Senator and then current Secretary of Energy⁷¹, Spencer Abraham, said that PNGV’s “direction is inconsistent with where the market is headed and where the automakers are headed” (Stoffer and Stoll, 2001) and, in agreement with the automakers, decided to trim the budget of the PNGV (Behrens, 2001a). Echoing the automakers’ arguments in their 1997 meeting with Gore, Abraham stated that the direction in which the market was heading was SUVs. Moreover, the Bush administration was not convinced of hydrogen technology; initially wanting to cut the FY2002 hydrogen research budget by 48% (Department of Energy, 2001a p.14) before introducing last minute changes (Department of Energy,

⁷⁰ Recorded interview with GM Hydrogen Engineer, 13th May 2011.

⁷¹ Abraham was an interesting choice for Secretary of Energy, considering that as a Senator he had cosponsored a bill to abolish the Department of Energy (Abraham and Tucker, 2010 p.xii).

2001b) to be more in line with the evolving position of the NEPDG as they developed the Cheney report (Department of Energy, 2001a p.16).

During this period, the American automakers were clear that they were heading towards focusing on hydrogen fuel cell vehicles. General Motors, building on its PreceptFCEV, had already signalled that hydrogen-based technology was the only way forward. In a Senate committee hearing on CAFE standards Thomas Davis, a Vice President of GM, stated that “as a company, we are committed to be the leader in new technologies to meet the energy, environmental and economic challenges of the 21st century...We see the ultimate vision for sustainable energy future in vehicles powered by hydrogen fuel cells” (Davis, 2001 pp.40-41). Likewise, in the same hearing, Ford's Susan Cischke, talked of hydrogen as “one of the most promising long-term technologies [that] offers the hope of breakthrough fuel economy improvements” as a range of technologies that Ford were pursuing (Cischke, 2001 p.47). While Cischke did mention hydrogen during a debate on CAFE standards, Davis more overtly displayed GM's position in saying that “CAFE is actually an obstacle to the realization of this [hydrogen economy] vision” (Davis, 2001 p.41); the argument being that

“we are investing significant engineering resources to create a completely revolutionary technical capability. A near-term shift in CAFE policy pulls engineering resources back to the incremental advancements in internal combustion engine systems and through reductions in vehicle power, weight, and size” (ibid. p.41).

At this point, then, investment in hydrogen, in return for a freeze in CAFE, is what the automakers were pushing for; they wanted to further delay the point at which they moved away from the current technological set up. They were also deploying several mechanisms of influence in order to push the US towards a hydrogen policy. In terms of visible power, the automakers were taking production decisions in line with their preferences, which saw them reject hybrids and embrace hydrogen. Likewise, in terms of hidden power, the auto corporations had worked to establish hydrogen as the dominant alternative fuel technology and successfully focused the debate on hydrogen, with the CaFCP and the “sexy alternative” Precept FCEV as good examples of these actions. These two manifestations of power were backed up by the invisible-power supported view of the auto corporations as the politico-economic

expert; the auto corporations were seen to be the best, and most informed, decision maker in terms of what vehicles technology to pursue because of their position in the market and were invited into policymaking spaces to give their views on such matters.

Yet Big Three decisions were not made in a vacuum. Beyond the US, German and Japanese automakers had also begun investing in hydrogen research as the hydrogen push became global. Optimism was high worldwide within the industry, with Honda saying it would sell HFC vehicles by 2003 (Nauman, 2000), GM predicting in 2000 that by 2010 10% of its global sales would be HFC vehicles which would rise to 25% in 2025 (Parry, 2000) and BMW predicting that half the vehicles it would produce in 2020 would be HFC vehicles. Competition within the automotive sector over this issue was based on a desire to be first, set the standard and “intimidate your competitors” (Hughes, 1997). Moreover, following the automotive companies, oil companies – such as BP, Chevron, ConocoPhillips, Shell and ExxonMobil – began investing in hydrogen and setting up subsidiary companies to produce hydrogen.

However, the move to focusing on hydrogen and the explosion in enthusiasm was at odds with the state of hydrogen research at the time. In the PNGV “the original targets for 2000 for the fuel cell system were not met” which meant “that the dates for meeting these targets [need to] be extended substantially” (National Research Council, 2001 p.9). Similarly, it also showed little awareness of, or reflection on, previous extensions of the HFC research timeframe, particularly from the hydrogen experiments in the 1970s. However, because of the status of the auto corporations as experts on the state of automotive research and the vehicle market, this dissonance between the state of the research and corporate pronouncements could not be, and was not, challenged effectively.

As such, following the renewed hydrogen optimism President Bush’s administration endorsed hydrogen in the Cheney Report (the creation of which, as the previous chapter explained, involved the automanufacturers and oil companies) and then moved to work with the automakers to re-shape the PNGV so as to create a hydrogen future. On the 9th January 2002, surrounded by fuel cell concept cars and high-ranking individuals from the Big Three, Spencer Abraham formally announced

the FreedomCAR partnership.⁷² Like PNGV, it focused on conducting precompetitive research that would accelerate the adoption of advanced vehicle technologies, but, unlike PNGV, would also advance the development of technologies required to create a hydrogen infrastructure. Joined by Senator Carl Levin, and other Michigan Congressmen, who stated that the Michigan delegation was “delighted” by the announcement and that the partnership represented “an alternative to federal mandates”⁷³ (Levin, 2002), Abraham claimed that PNGV was reformed because it “wasn’t moving a competitive automobile to the showroom” (Abraham, 2002). Likewise, following Senator Levin, automakers were quick to stress how their cooperative approach related to regulation, with Will Boddie, a Ford Vice President, talking of Ford’s commitment “to take significant environmental actions on our vehicles before regulation requires it” (Boddie, 2002). Spencer Abraham echoed this view, saying that “addressing our energy problems need not be a matter of tremendous hardship for small, incremental gains...We have within our reach the capability to leapfrog those problems with a wholly new approach to energy” (Schmidt, 2003). There was thus acceptance of the CAFE Hydrogen trade-off agenda by the executive, which occurred after several confidential meetings between representatives of both.

Although details about measurable goals and funding were limited at first, FreedomCAR’s objectives emerged a month after Abraham’s announcement at a House Science Committee hearing. The specific goals announced, which were agreed between the DOE and the auto industry (Culver, 2002 p.40), concerned meeting technical requirements for HFC components by 2010 and 2015. For example, one goal was “fuel cell systems, including a fuel reformer, having a peak brake engine efficiency of 45 percent, and that meet or exceed emissions standards with a cost target of \$45/kW by 2010 and \$30/kW in 2015” (Garman, 2002 p.40). More generally, however, the long-term aims of FreedomCAR were to give citizens

⁷² A FreedomCAR document (FreedomCAR and Fuel Partnership, 2006 p.iii) clarifies the meaning of the partnership as “not a legal entity and it is not intended that the “partners” have the responsibilities or rights of legal partners. Rather, everywhere that “Partnership” and “partners” are used it is used in an informal sense to denote participants working together towards the stated goals of the group.”

⁷³ Senator Levin went on to say that “we could not have a better break here than to have Spencer Abraham, who knows the auto industry, comes from Michigan, whose family has been so much involved in producing automobiles from the ground up. We are lucky to have Spencer Abraham in charge of this program.”

“Freedom from petroleum dependence; Freedom from pollutant emissions; Freedom for Americans to choose the kind of vehicle they want to drive, and to drive where they want, when they want; and Freedom to obtain fuel affordably and conveniently” (Garman, 2002).

While the headline-grabbing part of FreedomCAR was the move to hydrogen⁷⁴, the partnership did continue research into other drivetrains (hybrids, full electrics, etc). As with PNGV, commercialisation was left entirely to the automakers

“just as soon as the market case can be made for them. They don't have to wait for the hydrogen infrastructure. They don't have to wait for the fuel cell. As soon as these improvements are available, they will be available for the automakers to put into the cars to improve their performance” (Garman, 2002 p.129).

Yet the initial lack of information on the FreedomCAR partnership, combined with rhetoric of having a bold new hydrogen vision but also continuing research into hybrids, led to some confusion about the FreedomCAR partnership. Representative Boehlert (R-NY), speaking in the hearing when the goals were announced said that “the Department of Energy has oscillated between describing the program as a radical departure from PNGV and as its logical continuation” (Boehlert, 2002 p.16). These two distinct ways of describing the partnership continued to both be deployed throughout the early years of FreedomCAR, even though the “transition was pretty seamless”⁷⁵ between PNGV and FreedomCAR.

Similarly, confusion was caused by the Bush administration funding for FreedomCAR and their apparent flip-flopping on the issue of PNGV. As Automotive News (Stoffer, 2001) put it:

“the administration came to office 17 months ago calling the Clinton-era partnership misguided, unaccountable and bloated. A year later it proposed to spend about the same amount of money with the same industry partners”.

Initially, funds for FreedomCAR were simply transferred from PNGV and continued at the same level as before, although with the funding emphasis moving from hybrids to HFCs (Yacobucci, 2008 p.2). These funds were then enhanced in Bush’s 2003

⁷⁴ Recorded interview with GM, NAS and FreedomCAR Engineer, 19th April 2011.

⁷⁵ Recorded interview with GM, NAS and FreedomCAR Engineer, 19th April 2011.

State of the Union – a year after the announcement of FreedomCAR – as he requested a \$1.2 billion increase over five years in funding for hydrogen research so that “America can lead the world in developing clean, hydrogen-powered automobiles”. Consistent with Bush’s promise and the shift in emphasis of the vehicle technologies partnerships, around 70% of the total FreedomCAR expenditure was on HFC technology (National Academy of Sciences, 2010 p.145).

Beyond the switch in research from hybrids to hydrogen and the expansion of the partnership budget, the main feature that changed in the move from PNGV to FreedomCAR was the lack of any set commercialisation timeframe. Instead of a commercialisation goal or any joint partnership requirements, the decision was left to the individual companies “depending upon establishment of viable business cases” (FreedomCAR and Fuel Partnership, 2006 p.iv). According to a provision of the partnership agreed between the auto companies and the government, a “business case” meant that “all new vehicle and fuels options, including hydrogen, have to be cost-competitive with current vehicle and fuels options, including gasoline and diesel” (ibid. p.10). Thus, the PNGV to FreedomCAR change saw a move from trying to reduce the cost of vehicles that were \$7,500 more expensive than normal (as the Chrysler ESX3 was reported to be), to attempting to decrease the cost of vehicles that were 30 times the price of a conventional car.

Following this increase in the cost-reduction goal was an increased timeframe for expected commercialisation. PNGV’s commercialisation of high-mpg vehicles was meant to occur between 2004 and 2007. Instead, DOE’s projection of the future became:

“By 2020, vehicles are available that double fuel economy at an incremental cost that is paid back within three years through fuel cost savings; by 2030, affordable hydrogen vehicle technology options are widely available for Americans” (DOE Energy Efficiency and Renewable Energy, 2002 p.5).

Essentially, then, the utilisation of currently available technology was left to the automakers and the focus of the partnership became a technical leapfrogging of the status quo (with no requirements on commercialisation because of the uncertainty surrounding the technology readiness date) rather than on mandated gradual improvements to existing technology.

As such, the move against PNGV was driven by both industry and the executive branch. Industry, while liking the partnership (seen in their defence of the PNGV in 2000) as it provided cover for CAFE intransigence and provided them with positive environmental credentials, did not want to be bound by regulations, goals and requirements, which was their long-standing political position.⁷⁶ The executive position was somewhat more complex. Initially, the administration sought to cut the budget as part of a wider move to trim spending across government. However, over the course of several months where the government communicated intensely with the auto industry, the Bush administration switched to putting forward a positive vision of energy and environmental policy and, standing alongside industry, invested in the idea of a hydrogen economy. Such inconsistency in the Bush administration's continually-evolving position on hydrogen can be seen in the fact that Spencer Abraham had justified getting rid of PNGV because, as noted above, it "wasn't moving a competitive automobile to the showroom" (Abraham, 2002) and then replaced it with a new partnership that had a twenty year minimum before it would deliver a vehicle to a showroom.

While the operation of mechanisms of corporate influence and power in this situation are difficult to isolate due to the secrecy of the meetings and negotiations, one major mechanism appears to be the inviting of the corporations to exclusive policy-making spaces; perhaps due a combination of hidden and invisible power in the form of interpersonal relations and the view of the auto corporations as the appropriate and legitimate politico-economic experts. In particular, the NEPDG and the collaboration between Michigan members of Congress, the auto corporations and the Secretary of Energy are the most documentable instances of the operation of this mechanism.

Regardless as to the nature of its genesis, the FreedomCAR partnership became an important policy of the Bush government. In fact, the increase in the cost of oil throughout the Bush presidency added emphasis to Bush's promotion of the FreedomCAR partnership; as did the solidification of the scientific consensus, and world public opinion, on global warming. As part of its growing importance in September 2003 the FreedomCAR partnership was formally expanded to the FreedomCAR and FreedomFuel partnership. Utilising \$720 million of the \$1.2 billion

⁷⁶ Recorded Interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April 2011.

announced in the 2003 State of the Union (Cole, 2003), the purpose of FreedomFuel was to “improve efficiency, lower emissions and lower the cost of technologies that produce hydrogen from natural gas” (Behrens, 2001b). It also had to develop, reduce the cost of, and demonstrate, hydrogen refuelling infrastructure, as the cost of installing hydrogen dispensing equipment at just one fuel station was around \$500,000-\$1,000,000 (Stoffer and Truett, 2003). In order to achieve these goals, ExxonMobil, ConocoPhillips, Chevron, BP and Shell Hydrogen joined the partnership. Like the auto companies, although to a lesser extent, these companies had conducted some research on hydrogen prior to FreedomCAR – with GM and ExxonMobil collaborating to produce an onboard gasoline-to-hydrogen processor in 2000 (Ogden, 2002 p.15).

That two of the oil companies were foreign is particularly noteworthy. On the automobile side, European and Japanese companies were excluded as the government “have a mandate to help America, not the world”.⁷⁷ This exclusion reflects the long-standing tension between the US and foreign automakers whereby foreign encroachment on the US auto market has only come at the expense of the Big Three’s market share and so caused them major problems. This tension can be seen quite clearly in the example of the Big Three successfully pushing President Reagan – the most free market modern President – to agree an import quota with the Japanese government that restricted the number of cars Japanese companies could ship to the US regardless of demand (Luger, 2000 p.141).⁷⁸ In contrast to foreign automakers, the foreign oil companies were much more politically connected in the US (being, for instance, members of the American Petroleum Institute, which primarily represents the (American) supermajors)⁷⁹ and are seen as more international than national – the American units of Shell and BP “put a lot of money in the pockets of American investors and taxpayers”⁸⁰ and so were somewhat different to the foreign automakers.⁸¹

⁷⁷ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁷⁸ A direct consequence of Reagan’s import quota was the Japanese (followed by European) auto companies setting up “transplant” factories in the US.

⁷⁹ Recorded interview with American Petroleum Institute staff, 14th April 2011

⁸⁰ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁸¹ One important element in the way foreign companies in each industry are viewed is that auto companies rely heavily on branding and identifying difference between brands, whereas the oil industry largely supplies a standard product and can not substantially compete on this level, despite

In 2008 the partnership was expanded again. This time two major power companies – DTE Energy (Detroit) and Southern California Edison – were added to the partnership. These corporations joined after the agenda had already been set and so, particularly in the Bush period, made little contribution to the initial goals, aims and running of the FreedomCAR partnership. Their inclusion reflected the dampening down of hydrogen enthusiasm and an increasing belief in plug-in hybrid electric vehicles (PHEVs) as a path to post-fossil transport; with the role of these companies to help with the creation of infrastructure capable of supporting a PHEV (Congressional Quarterly, 2008). Despite the increase in interest in PHEVs, the primary focus of FreedomCAR remained hydrogen in the Bush period.

FreedomCAR and California

While through the FreedomCAR partnership, the Bush administration claimed it was seeking to improve the environment, green the transportation system and move to a post-petroleum world, it also sought to monopolise policy making in the area. Following similar moves with CAFE standards, the Bush administration and the automakers sought to limit California's capacity to force technology in the automotive sector. The actions taken in California saw a similar situation as at the federal level play out at the state level, with both a negative campaign against the old requirements for electric-drive vehicles and a positive campaign for hydrogen vehicles.

The negative campaign saw the Bush administration supporting a lawsuit initially filed by GM, DaimlerChrysler and Californian car dealers over the ZEV mandate. With the automakers arguing that the ZEV violates the EPCA in that it is a regulation pertaining to fuel economy, the US Justice Department filed an amicus brief (a unsolicited supporting statement) with the court on the side of the auto companies (Rajan, 2004 p.218). A GM source (McKay, 2001), stated the position of his company as "We are aggressively opposed to mandates in all forms...If there was a market for (zero emission) vehicles in California, there would be no need for a mandate". To resolve the litigation and bring the automakers back on side, CARB reformed the ZEV mandate, dropping any requirement for electric cars. In a CARB

their best efforts. Auto corporations, then, work to have a greater identity; part of which is unavoidably nationality.

press release (CARB, 2003b), a DaimlerChrysler spokesman spoke of how his company agreed with CARB's reforms:

“While we don’t believe mandates are appropriate in the consumer-driven marketplace, DaimlerChrysler is committed to work with the Air Resource Board and other interested parties to ensure that all technologies that can benefit the air quality in the State of California are recognized and permitted in any future regulations.”

Following success in their litigative moves the auto companies quickly withdrew the electric vehicles that had been used in the trial program agreed to in the Memoranda of Understanding. While a consumer campaign sought to fight the withdrawal of these electric vehicles, the automakers successfully took back and destroyed the vehicles. For example, GM, ignoring the \$1.9 million offered by former leasees for 78 remaining EV1s, insisted that there was no consumer demand for electric vehicles as people would not be willing to accept range limitations and crushed the majority of the 1,115 original vehicles (Paine, 2006). Around 40 of the EV1s were deactivated – components removed, wires cut and software wiped – and given to museums and Universities, with the result that “the GM EV1 was all but wiped from the earth” (Holt, 2008 H10927). GM, then, brusquely utilised their visible power; turning down cash for vehicles that people wanted, refusing to offer or produce vehicles for a market niche that wanted them and, ultimately, destroying the idea of the EV1 as a functional vehicle that provided a technological stepping stone and replacing it with the idea of the EV1 as a historical misstep.

On the positive side of the hydrogen campaign, in 2003 the California Fuel Cell Partnership put on a three-day 400 mile trip from West Sacramento (home of the partnership) to Los Angeles as a demonstration of the capacities of hydrogen vehicles – arguing that the event demonstrated that HFC vehicles were “road ready” (Hall, 2003). Thus, at the same time as denouncing electric cars and actively opposing consumers, the industry began to promote hydrogen vehicles.

While CARB's reform of the ZEV mandate did not drop the idea of encouraging new technologies since it required the six main auto manufacturers to produce 250 fuel cell vehicles in the 2005-2008 period (CARB, 2003a) it accepted that fuel cell technology was not close to commercialisation and so offered credits for hybrid

vehicles that could offset any shortfalls in HFC vehicles (Goodhue, 2004). Thus, while still retaining some resemblance to its original provisions, California's policy had been slowly stripped of its teeth, which resulted in it having little direct impact on air quality.

The Californian shift to hydrogen was complete when Governor Schwarzenegger, in his 2004 State of the State, laid out his "Vision 2010". Vision 2010 envisioned private money ("spearhead[ed]" by the California Fuel Cell Partnership (Rohde, 2002)) setting up 150-200 hydrogen fuelling stations on California's major highways, which was estimated to be around one every 20 miles. These stations were intended to support the "tens of thousands" (California.gov, 2004) of HFC vehicles that the automakers had indicated were going to be available by 2010. The vision was later supported by public funding of \$6.5 million to support 3 hydrogen fuelling stations and the purchase of 12 HFC vehicles (California.gov, 2005). However, by 2009 the total number of hydrogen fuel stations was 24, mostly clustered around Los Angeles (Sullivan, 2009).

Summary

The Bush administration came to power and initially sought to reduce the Clinton-era PNGV; claiming that the PNGV was not in line with the market in not producing SUV technology (something Gore had been willing to concede in 1997) and had not brought vehicles to the showroom. However, after a period of confidential meetings with the automakers (and with optimistic industry assessments of the hydrogen timeframe and with a Secretary of Energy well-disposed to the auto industry) the Bush administration shifted the PNGV to the FreedomCAR partnership. While maintaining some of the same focus, the new partnership was much more long term and had few clear goals, significantly reducing the accountability of the auto corporations. The partnership also served wider auto interests by providing a positive "non-regulatory" approach that shielded them from pressure over CAFE standards and that provided proof for the public that the Big Three were concerned with the environment. At the same time, the government and the auto corporations were fighting California and rejecting any requirements for the implementation of electric vehicles or hybrids. Technology that was approaching, or had, a viable business case was rejected for research into a technology that had repeatedly proven to be

further-off than thought and was accepted as taking a very long time to bring to commercialisation.

Because of a lack of internal documents about the decision-making process, the extent of, or reason for, corporate influence is difficult to gauge. The most noticeable element of corporate power in the formulation of FreedomCAR was the executive working alongside the auto industry to realise (almost entirely) auto industry goals. However, as the last chapter documented, the executive was less aligned with industry objectives in CAFE and much more reform minded. In explaining this variance two non-exclusive explanations, based on hidden and invisible power respectively, present themselves. First, that powerful actors within the executive with pro-corporate or pro-auto beliefs/associations – such as Dick Cheney, Andrew Card and Spencer Abraham – were able to influence this particular policy area, but not the other. This explanation is bolstered by the fact that there were a greater number of actors able to influence CAFE (with particular support for reform in the Senate) and so the role of individuals was lessened. It is also supported by FreedomCAR being part of Michigan-born-and-bred Spencer Abraham's remit in being Secretary of Energy, as opposed to CAFE being the remit of Secretary of Transport Norman Mineta – the only Democrat in Bush's cabinets.

Second, that there was a significant degree of genuine belief in the executive (and perhaps the auto industry) about the prospects for a technological fix in the form of hydrogen fuel cell technology. Instead of having a largely closed debate about the effectiveness of CAFE – thirty years of evidence had shown it to be able to improve fuel economy – hydrogen fuel cell technology, and future technology more generally, was an open debate. This debate would have been significantly swayed by the auto industry pushing the technology, giving it its expert recommendation and choosing hydrogen in the allocation of its research funds. Thus the creation of FreedomCAR and the executive internalisation of auto industry goals can be explained by the greater scope for decisive action by auto supporters in the executive and by a genuine belief in hydrogen technology that was inculcated by the auto industry.

Implementation

The FreedomCAR partnership, as a partnership between corporations and government, necessarily involved a large degree of corporate involvement. In itself,

this relationship transcended normal interest group-government interactions. Yet, if the structure of the partnership was vertical, whereby corporations were the junior partners being used to achieve specified government goals, then the relationship would not move too far beyond normal, democratic interactions. In the case of vertical partnerships, the distinction between government and governed is maintained and, while a group is privileged and their visible power has been extended, control remains with the elected government.

However, the FreedomCAR partnership was horizontal, with the corporations involved in decisions about the direction, make-up and goals of the partnership. This horizontal interaction occurred through the Executive Steering Group (ESG), which consisted of the Assistant Secretary for Energy Efficiency and Renewable Energy (EERE), and a vice-President or President of each of the corporate partners. ESG meetings occurred irregularly and subject to need. When they did meet, the ESG discussed issues pertaining to the overall direction of the partnership and concerns or issues with the partnership. Reflecting the horizontal nature of the partnership “ESG members participate as peers with no designation of officers” (FreedomCAR and Fuel Partnership, 2006 p.5). This relationship was reiterated in the policy of who hosted meetings, with each of the companies and the DOE taking turns in rotation.

The infrequent meetings of the ESG, then, were where non-technical high-level officials from both government and corporations would collaboratively make decisions with a view to achieving political and commercial goals. While these meetings were, in essence, establishing government policy, the extent to which corporate executives had a say in directing the partnership is impossible to gauge as the minutes of these meetings, alongside membership of the ESG, have been kept confidential. However, considering the role the auto corporations played in the setting up of the partnership and the horizontal relationship dynamics evident in the ESG, it is unlikely to be small. Thus, in the ESG, and FreedomCAR more generally, the visible power of the participant corporations was expanded significantly in that they were given public authority.

Beyond the ESG, however, the partnership was vertical, with decisions occurring at the top affecting the actions of those at the bottom. In the layer below the ESG were the operations groups (see fig. 6.1), which were run by a mix of technical and non-technical managerial-level staff. These groups tried to provide a two-way bridge

between the wider strategic political and commercial goals decided by the ESG and the technical goals and achievements of the partnership. Their direct remit within the partnership’s hierarchical structure, then, was to be “responsible for directing the technical teams and prioritizing research issues” (National Academy of Sciences, 2010 p.21). As the groups were split according to their area of expertise (i.e. the fuel operations groups had representatives from the oil companies, but not the auto companies) the groups also worked to improve technical co-ordination between the fuel, automotive and (later) utility sides of the partnership.

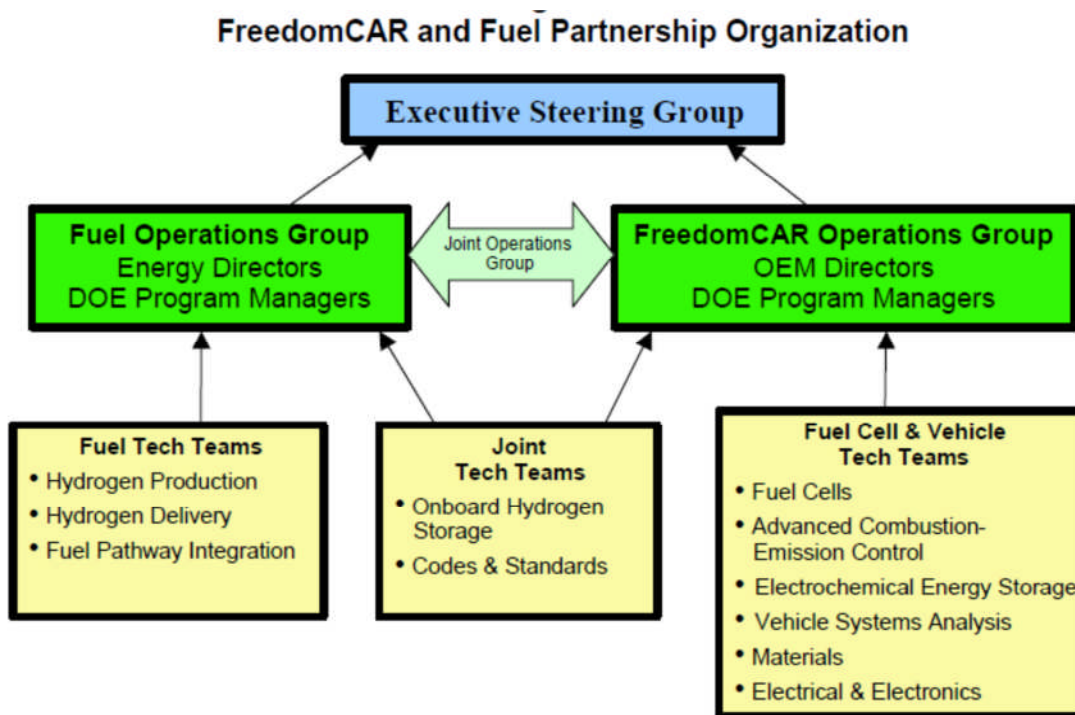


Figure 6-1 Structure of the FreedomCAR partnership in 2006, prior to addition of utility companies FreedomCAR and Fuel Partnership (2006 p.5).

The final level, and most active part, of the partnership were the technical teams. Technical teams consisted of DOE and corporate scientists and engineers with knowledge specific to the area. Meeting at least once a month (depending on the team and need) their purpose was to provide ideas of where research would be helpful to them (Devlin, 2005). As such, the technical teams would “jointly conduct technology roadmapping, determine technical requirements, suggest research and development (R&D) priorities, [and] monitor R&D activities” (FreedomCAR and Fuel Partnership, 2006 p.iv). However, due to antitrust laws that prevented companies

from directing federal research, the tech teams were not able to set research priorities, but to collaboratively work through the teams.⁸²

As such, the FreedomCAR partners were not primarily engaged in conducting research funded by government; research funds did not primarily flow to the corporate partners but to research institutions and smaller businesses. Like PNGV,

“the Partnership intends to fund R&D activities at the national laboratories, traditional and non-traditional automotive suppliers, universities, small businesses, and other research institutions. It is expected that direct funding to automobile companies will be limited. In general, research projects will be selected competitively, with industry and government jointly developing the technical scope, priorities, and project measures” (FreedomCAR Partnership, 2002 p.7).

There were two reasons for this arrangement. DOE (in particular the office of Basic Energy Sciences) didn't want to fund the corporations as they “want it to go to academics and are trying to educate graduate students...[corporations] would go waste it on some damn product.”⁸³ The second reason is that the auto companies did not want to obtain government funding as

*“the last thing you wanted to do was tell your boss you had got a line on some government funding because that meant you had got a line on some government restrictions and why on earth would you want that? We have all the money you need.”*⁸⁴

Thus the structure of the partnership, laid out above, gave corporate partners two roles within FreedomCAR research. The first role of corporations within FreedomCAR can be seen in 2005 NAS overview of the FreedomCAR partnership, which assessed the structure of the partnership as “bring[ing] the capabilities of the nation's federal laboratories and other research institutions to bear on overcoming the problems, *identified by industry*, that are critical to achieving the program vision” (National Academy of Sciences, 2005 pp.1-2 [emphasis added]). Therefore, the role of the corporations, alongside DOE, was to direct research by other bodies so that,

⁸² Recorded interview with GM Hydrogen Engineer, 13th May 2011.

⁸³ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁸⁴ Recorded interview with GM Hydrogen Engineer, 13th May 2011. Note: The quote was preceded by the interviewee saying how this attitude has changed since the bankruptcies of Chrysler and GM and, at present, is no longer applicable.

ultimately, it can be used in corporate products and to direct an overall plan as to how to create a hydrogen economy. Both of these functions were done using taxpayer funds. Essentially, then, through the tech teams, operations groups and executive steering group, the FreedomCAR partnership was designed in a manner that allowed the DOE and corporations to tailor public research for industry-defined goals and industry needs; with potential profits from the partnership accruing to the partner corporations.

The second role of the corporations was to actually be involved in the process of progressing hydrogen technology with their own funds. This involvement came in conducting pre-competitive collaborative research, conducting proprietary research and demonstrating technology; each of which needs some explanation. Pre-competitive collaborative research involves exploring the basic principles of how necessary systems/components for a hydrogen economy would/could work and pooling this data with their competitors. It is pre-competitive in the sense that an end product is not being developed. With the corporations, the emphasis of their pre-competitive research was on applied (mechanism) rather than basic (principle) science, which was primarily researched in universities.

In co-operating with other partners, the corporations' role was to work within Cooperative Research and Development Agreements (CRADAs). As one staff member of the partnership put it, "the idea is that you work together, then the partners pull pieces of the knowledge [developed by the partnership] off as they can use it."⁸⁵ CRADAs are where costs and/or resources (such as staff or equipment) are shared in conducting the research, and intellectual property arising out of the research is also shared (FreedomCAR Partnership, 2002). As technology progressed, the corporations had to decrease co-operation when they started to conduct proprietary research. The details of proprietary research, as they could form the basis of a product/patent, were kept confidential from both the public and other members of the partnership. Ultimately, corporate proprietary research was meant to cover the gap between basic research and the showroom.

In bridging the laboratory-showroom gap with hydrogen cars, partnership work would necessarily become increasingly marginalised as the required basic collaborative

⁸⁵ Recorded interview with GM and FreedomCAR Scientist, 19th April 2011.

research neared completion and competitive proprietary research outside of the purview of the partnership took over, “thus eliminating many of the benefits of a partnership” (Misiak, 2004). Also, through proprietary research, the partner corporations would be able to financially benefit from public-funded research; potentially, if a hydrogen economy actually took off, to a truly massive extent. So, while financial costs are (nominally, although unverifiably) shared between the public and corporations, the vast majority of the current, and potential, financial benefits that come from proprietary research are not.

The final element of the research carried out by the corporations was technology demonstration and validation. These roles were performed to such a great extent by the corporate partners that “you could almost make the argument [that the partnership corporations] are the technology validation program”.⁸⁶ Demonstration involved the creation of vehicles and hydrogen stations. Ostensibly, the purpose of demonstration was to try the technology in real world conditions and so both anticipate and solve potential issues before commercialisation and to gather data on performance of current components. However, demonstration was also used to increase public support for FreedomCAR in that it showed a concrete example of what the research is trying to achieve – a working hydrogen vehicle and fuelling infrastructure – and thus portrays the idea that the technology is not far off. The most obvious example of hydrogen being used in this manner is Governor Schwarzenegger’s (and GM’s) “hydrogen hummer” H2H, which was lent to the Governor to open new stations on the hydrogen highway. That the vehicle is prohibitively expensive and has durability issues, or that the fuelling infrastructure is limited in its coverage, are issues that were not covered when Governor Schwarzenegger drove on to a new hydrogen forecourt.

Demonstration also has a positive impact for the corporate partners as it improves the commercial perception of their technological capabilities. Having a working “car of the future” provided positive public relations material for the companies that could improve sales of their current products and gave them advertising that backed up their green credentials – a particularly important public message for the oil companies. For example, in figure 6-2 the angle of the car allows both the full display of GM’s logo and Shell’s branded pump next to the President of the United States.

⁸⁶ Recorded interview with GM Hydrogen Engineer, 13th May 2011.

This image sends both an idea of the companies working with the government in making progress towards a fossil-free future and an idea of these companies as futuristic and cutting-edge, particularly through GM's use of "technology" and "Gen".



Figure 6-2: President Bush with Rick Scott (Shell)
Source: WhiteHouse.gov (2005)

As such, both the roles the corporate partners played allowed them to profit from the partnership. The corporations were able to profit financially by utilising public research to support product creation and profit-driven activity. They were also able, alongside the government, to profit politically by being seen as the "good guys"⁸⁷ and as environmentally-friendly companies. Another form of political profit was being allowed to collaboratively direct public-funded research and to have a privy position in deciding the future of US environmental and transportation policy. This decision-making position was further enhanced by the commercialisation of technology decisions being left entirely in the hands of the partner corporations.

Combined, the two roles corporations had within the FreedomCAR partnership made the partnership out of sync with both administration rhetoric and US law. With

⁸⁷ Recorded interview with GM Hydrogen Engineer, 13th May 2011

rhetoric, George W. Bush and the Republican party professed that support for free markets is a core American value and the right way to govern. For example, in his memoirs, Bush (2010 p.38) stated that

“the free market provided the fairest way to allocate resources. Lower taxes rewarded hard work and encouraged risk taking. Eliminating barriers to trade created new export markets for American producers & more choice for our consumers. Government should respect its constitutional limits”.

However, in actively involving a select group of corporations in a partnership to distribute research funds, the Bush government violated free market principles of market competition; instead collaborating with corporations who, in the automotive sector in 2002 for example, accounted for 60% of the US market (Wards Automotive, 2012).

In law, the FreedomCAR partnership skirted so close to antitrust laws that lawyers had to present at every meeting to ensure compliance with the law.⁸⁸ Yet in many ways the partnership was constructed in such a manner that it actually provided de facto political protection against antitrust law as the inclusion of the DOE in the partnership meant that prosecutions under anti-trust law, which is mainly enforced by the US Department of Justice or Federal Trade Commission (each of which are heading by Presidential appointees), were extremely unlikely; the executive was unlikely to undermine a partnership it founded (Cefo, 2009 p.25).

Oversight and Accountability

As seen in the formulation section, the creation of the FreedomCAR partnership had little democratic oversight or accountability as the decisions were made behind closed doors with little public, or even Congressional, oversight. Within the implementation of the partnership there were further issues with transparency and, subsequently, with the accountability of the partnership to both the public and other government branches. Oversight and transparency of the FreedomCAR partnership – and the subsequent ability for other groups to understand or influence the partnership and vehicle technology policy – was limited on a number of levels.

At the highest level, in the form of the ESG, the FreedomCAR partnership was not transparent or directly accountable to the public. The membership of the board and

⁸⁸ Recorded interview with American Petroleum Institute staff, 14th April 2011.

what was discussed at board meetings is not publically available. Changes in direction, or the admission of new members to the partnership were made in the ESG and not subject to government approval other than by the DOE. There was a somewhat small and tenuous link to the democratic accountability structure of the US government in the only publically-known participant in the ESG – the EERE Assistant Secretary – being a political appointee but even this tenuous link is diluted by the horizontal nature of the ESG and the view of members as equals.

Similarly, “oversight by Congress is extremely indirect, if it exists at all” and Congressional input was very limited.⁸⁹ The only avenue for Congressional power over the partnership was the power of the purse. While utilising the power of the purse could have potentially ended FreedomCAR entirely (as was attempted with PNGV in 2000) the relatively low levels of expenditure on the partnership meant “its not really worth their while”⁹⁰ to reduce or zero funding. Moreover, attempts to reduce funding for FreedomCAR would probably have run into opposition from Congresspeople with automanufacturers, hydrogen fuel cell companies or national labs⁹¹ in their district, who would work to protect the funding for the benefit of their districts. As one interviewee put it, “you know where your support is going to come from, [if you] know where the businesses are – South Carolina, Pennsylvania, Connecticut, starting to see more from Ohio, California [and Michigan].”⁹² Indeed, the House Hydrogen and Fuel Cells Caucus was founded in 2004 by Representatives from South Carolina, Connecticut and Pennsylvania, alongside a Representative from Maryland (Larson, 2012). When it came to Congressional hearings about FreedomCAR, the partnership could rely on these supporters to ensure the discussions were about technology options and the future of technology (hence names such as “The Pathway to the Hydrogen Economy”) rather than questions about the working of the partnership and the close relationship between the DOE and the automakers.

Further down the partnership structure, at the tech team level, there was greater information, but public accountability was still difficult. No careful record was taken of what was discussed at meetings, only basic minutes that were not even publically-

⁸⁹ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁹⁰ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁹¹ Recorded interview with American Petroleum Institute staff, 14th April 2011

⁹² Recorded interview with Congressional Staffer, 9th June 2011

available. Likewise, while not confidential, the membership of the tech teams was also not publicised. Public accountability was meant to be enhanced through tech team “roadmaps”, which detailed the goals of the teams, and the Merit Review and Peer Evaluation of DOE’s hydrogen fuel cells program – a free, publically-accessible meeting that takes place each year in Washington D.C. – where roadmap progress is meant to be assessed. Yet, the lack of vital information about the operation of the tech teams, and the technical focus of the Merit Review (it works more akin to an academic conference on hydrogen), means what happens at the tech teams is “quasi-public.”⁹³

Outside of the formal structure of the partnership, at the research level, information is even more available, but public accountability still remains difficult. So, for example, research conducted by public bodies is publically available, but research conducted through CRADAs can have availability delayed by up to 5 years, and proprietary research is not available at all.⁹⁴ The lack of availability of CRADA and proprietary research particularly frustrates accountability as this research is the sort that could lead to the end goal of producing hydrogen vehicles. It also weakens the extent to which the Annual Merit Review is able to contribute to an assessment of the progress being made through the tech teams because of the disconnect between the publically-available information and the end goal of producing a commercially-available hydrogen vehicle.

Some of the problems with public oversight are common to public-private partnerships and other collaborative arrangements in the US. Collaboration between government and business, while having some degree of pragmatic output legitimacy⁹⁵, struggles to follow the basic procedures required for democratic control and, as such, amplifies Lindblom’s (1977 p.356) point that the major corporation “does not fit” within democratic theory in and of themselves; major corporations fit even less well in democratic theory when they take on traditionally public roles such as deciding publically-funded research goals. This point is particularly true when the partnership is organised, as FreedomCAR is, in a horizontal manner.

⁹³ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁹⁴ Recorded interview with FreedomCAR Senior Staff, 15th April 2011.

⁹⁵ “A legitimacy deriving from the ability to provide desired results rather than based on participatory democratic norms and procedures” (Fuchs, 2005, p.22).

Yet other issues were built in during the formulation and construction of the FreedomCAR partnership as part of the switch from PNGV. PNGV had relatively clear and reasonably straightforward technology goals that allowed citizen assessment since a citizen could simply assess if the auto companies had an 80 mpg concept car in 2000. In contrast, the goals of FreedomCAR were highly technical and accessible only to experts (such as “fuel cell systems, including a fuel reformer, having a peak brake engine efficiency of 45 percent, and that meet or exceed emissions standards with a cost target of \$45/kW by 2010 and \$30/kW in 2015”); accountability was obscured to a greater extent with FreedomCAR. In particular, the removal of a vehicle production goal made public oversight and accountability much more difficult. Hence, one interviewee summed up public oversight at the research level as “it’s open, it’s transparent and no-one cares.”⁹⁶

Summary

The role of corporations – BP, Chevron, ConocoPhillips, Exxon Mobil, Shell Hydrogen and USCAR – in the implementation and running of FreedomCAR and FreedomFuel was, as it was a public-private partnership, necessarily large. They had an instrumental role in developing and assessing overall partnership goals, of admitting new partners and of determining where (federal) research funds were directed. The benefits for these corporations were potentially massive, as the partnership-directed research could have been spun-off and utilised in new products and advanced technologies. At the highest level, these actions were taken with little oversight by, or transparency to, Congress and the public. At lower levels, there was greater information available yet this information only mildly aided oversight as the technical nature of the information meant most of the public (and Congressmen) would be “bored to tears”⁹⁷; information about the actual political decisions concerning a policy intended to solve major problems in the US was not made available.

In the implementation of FreedomCAR, then, the auto corporations primarily exercised visible power and the use of private authority in a (traditionally) public space. However, invisible power had helped create a legal framework that the corporations were empowered by and maintained the legitimacy of the partnership

⁹⁶ Recorded interview with GM Hydrogen Engineer, 13th May 2011

⁹⁷ Recorded interview with GM Hydrogen Engineer, 13th May 2011

and its actions. Equally, hidden power mechanisms were operating to provide cover for the partnership, with media coverage of the technology validation programme conveying the idea that the technology was increasingly close to commercialisation.

Potential to Reduce Oil Dependence

The FreedomCAR partnership, and the development of a hydrogen economy, was sold from the outset, as a method of reducing US oil dependence. However, one basic point that was clear about FreedomCAR is that it would not reduce, by any small measure, US oil dependence in the short term. Beyond its short-term outlook, there are a number of ways to evaluate FreedomCAR's long-term potential to reduce oil dependence: its potential at the outset, in comparison to the marketplace, in the capacity of the structure to reach its goals, in the outcomes so far and in the prudence of the policy. Evaluating from these perspectives will allow an assessment of the extent to which the FreedomCAR partnership was a representation of corporate interests, a prudent evidence-driven policy, or a mixture of the two.

At the outset of the partnership, there was not an established scientific consensus on the potential of HFCs to become competitive with conventional technology. There were international conferences, academic journals and professional organisations dedicated to establishing a hydrogen economy (Veziroglu, 2000), which were forums for scientists who saw the technology as not only the ideal solution to a host of problems, but as nearing maturity. There were also other policies around the world, with Iceland attempting to create a hydrogen economy for its 320,000 inhabitants starting in 1998. Like with FreedomCAR, Iceland formed a public-private company – Icelandic New Energy Ltd. – whose ownership was split between a 51% stake owned by a combination of Icelandic firms and the Icelandic government and a 49% stake split between Norsk Hydro, Shell Hydrogen and DaimlerChrysler. This public-private company was meant to research and demonstrate hydrogen technology with the intention of powering buses, private vehicles and fishing boats with domestically (and renewably) produced hydrogen (Sigfusson, 2006), and foresaw the complete transition to a hydrogen economy by 2050 (Sigfusson, 2007 p.411).

Likewise, hydrogen optimism came from the autocompanies themselves, who had conducted research on HFCs for many years and, starting in the mid-1990s, had publicised commercialisation dates that were very near term, such as GM's 1999

estimation of commercialisation by 2004.⁹⁸ The autocompanies continued to produce optimistic assessments, with GM and Shell's 2003 estimation of commercialisation by 2010 (Tierney, 2003). While this "just-around-the-corner" (Freedonia, 2002) view of hydrogen that the industry perpetuated did not seem to directly impact the formulation of the partnership, in that FreedomCAR was conceived of as a long-term project, it was a significant part of the industry's attempt to sell hydrogen to the public and policymakers, such as in the CaFCP tour in 2003. Likewise, the oil companies had shown public interest in, and talked up, hydrogen as part of their move towards a greener "Beyond Petroleum" image.

Before the Bush period, when interest in hydrogen was operating at a relatively low level, opposition to the technology was muted; it was an idea that did not warrant much critical attention as it was a 163-year-old technology that was not threatening to replace the ICE in any way. Yet when the idea of a hydrogen economy became well-known through the move to FreedomCAR, scientific opposition galvanised quickly because it drew attention away from other potential solutions; with attempts to create a hydrogen economy described as a "almost certainly futile attempt to find a utopian way to reduce dependency on fossil fuels" (Shinnar, 2003 p.474), "inefficient" and "flawed" (Kreith and West, 2004 p.256) and an experiment "not supported by the laws of nature" (Bossel, 2003 p.16). Following a similar train of thought, former DOE Assistant Secretary, Joseph Romm argued that to combat such "hyping" that occurred with hydrogen that

"Analysts should state clearly what is technologically and commercially possible today and, when discussing the future, be equally clear that projections are speculative and will require both major advances in technology and major government intervention in the marketplace. Analysis should treat competition fairly: If major advances in cost reduction and performance are projected for hydrogen technologies, similar advances must be projected for hybrid vehicles, renewable biofuels, and the like. If hydrogen is being presented as a solution to problems such as global warming and dependence

⁹⁸ The disjoint between the public assessment of the technology by the corporations and the goals for the partnership that were set by the corporations (which were originally set for HFCs to be somewhat cost-competitive with ICEs by 2015) suggests that behind closed doors a longer timeframe was being represented.

on imported oil, then the projected costs must be compared with those of the likely competition” (2004 pp.188-189).

There was a positive view of hydrogen, but it was not the established or mainstream scientific consensus. Instead, it was parochial, speculative, beset by problems and, in retrospect, “incredibly naive”.⁹⁹ Politicians and decision-makers either ignored or were not cognizant of the shaky foundations from which policy was being made. From the outset, the possibility of achieving the intended policy goals of FreedomCAR – to reduce US oil dependence and to combat climate change – was uncertain because the timeline for research progression, and the capacity of HFCs to compete with current and alternative technologies, was very uncertain.

In comparison to the uncertainty of hydrogen, technological changes were occurring in the marketplace throughout the Bush presidency. In 2000 Honda and Toyota starting selling the Insight and the Prius, respectively, which both utilised an electric/gasoline hybrid drivetrain that improved fuel efficiency significantly, with the MY2000 Insight being rated at 53mpg and the MY2000 Prius at 41mpg (Department of Energy, 2012a). By 2011, 2.15 million hybrid vehicles had been sold in the US, of which 1.75 million were produced by Japanese companies (Department of Energy, 2012b). Although hybrids were not a complete and total solution to US oil dependence they were actually reducing individual citizens’ oil consumption in the present and had two further advantages over hydrogen.

First, the PNGV had prepared the automakers to produce hybrid vehicles and the technology was nearing cost-competitiveness with traditional ICEs. Promoting these vehicles in 2000 would have meant that (even more than without government promotion) significant improvements in the technology would have occurred before the first HFC vehicle was even sold. As Joseph Romm (2004 p.147), considering the achievements of MY2000 Toyota Prius, says “imagine how good hybrid vehicles will be by 2020, when they might first have to face fuel cell vehicles in the marketplace.”

Second, in having an electric drive system, hybrids encourage investment and research into batteries and electric technologies. Improvements in these technologies would make full-electric vehicles and plug-in hybrids¹⁰⁰ more viable in

⁹⁹ Recorded interview with GM Hydrogen Engineer, 13th May 2011

¹⁰⁰ Plug-in hybrids, which come in many varieties, utilise more electric power and can be charged directly, often from the national grid.

the open market and more liable to attract increasing funding from companies and investors. As such, for hybrids and electric vehicles, a gradual progression of the technology (and the market) is possible that would be much more in line with the professed free market ideology of the Bush government and could still achieve an oil-free transportation system. Even if, in the future, battery technology did not progress to the extent desired, hybrid technology would still have reduced America's consumption of oil from 2000 onwards. In contrast, deployment of HFCs require the technology to be fully ready before it begins to cut oil consumption and does not naturally support a gradual progression (Romm, 2006 p.2612).

Third, if battery technology did progress, the infrastructure needed for plug-in hybrids and electric cars is not an entirely new infrastructure. Instead of requiring new infrastructure to be built from the point of production to the point of use, as is the case with hydrogen, electric vehicle fuelling involves extending the already-existent infrastructure. In such a case of creating an electric vehicle market, plug-in hybrids would serve as an important bridge to the infrastructural changes needed for full electric vehicles in that they would utilise the required infrastructure (thus creating demand for the expansion of the infrastructure) but would not be totally reliant on the infrastructure; they can switch to gasoline when charging infrastructure is not available and so minimise the chicken-and-egg problem (ibid. p.2612). As such, encouraging hybridisation offered the Bush government an evolutionary approach that did not require extensive government involvement, made use of an already-established program in PNGV and promised immediate progress towards stated goals, but was not pursued in any meaningful way and instead left hybrid technology production decisions "to the market". Even if the myriad of problems (mostly coming from battery technology) that full electric vehicles currently face result in the technology never going mainstream the hybrid approach would have still produced benefits of reduced oil consumption in the meantime; the technology gamble on electrics always had a payoff, whereas hydrogen did not.

What is more, the manner by which a hydrogen transportation system was pursued involved a great deal of non-competitive actions that did not utilise "efficient" market mechanisms and transferred significant powers to the private sector. In having the structure of FreedomCAR as an equal partnership between the government and a select group of corporations the Bush administration limited the partnership's

capacity to achieve its stated goals in three ways. First, it excluded start-up companies and did not harness the potential of these companies to introduce revolutionary technologies. As the 2005 NAS review pointed out,

“historically, in fields as disparate as microelectronics and medical devices, pathbreaking commercial innovations have come from start-up companies at least as often as from the industry incumbents” (National Academy of Sciences, 2005 p.105).

For instance, in 2008 Tesla Motors, a Silicon Valley-based independent founded in 2003, produced the Tesla Roadster, a 111 mpg-equivalent, 245 mile range, fully-electric car (Loveday, 2011). Building a research partnership exclusively with “incumbent” corporations, then, cannot even be justified on pragmatic grounds as these companies are not necessarily the most innovative, or have the best ideas as to what direction research should be heading in.

Second, the partnership “was for the domestic manufacturers, all the other manufacturers were shut out”¹⁰¹; the partnership excluded Japanese and European automakers, who were conducting their own research and who would have been able to make a significant contribution to the partnership. These corporations were excluded because, as one interviewee stated, the government “have a mandate to help America, not the world”.¹⁰² Yet, the entire purpose of the FreedomCAR partnership was to help the US by producing hydrogen technology; its publically-stated goal was not to help US automakers, but to help the country achieve freedom from oil dependence (National Academy of Sciences, 2005 p.2).

Third, in bringing in the (American) corporate partners, and giving them the power to decide on commercialisation, priority was given to the interests of the corporations and important national decisions were deferred to the corporations (Congress, 2003 p.5). This approach is particularly problematic as “the automakers are in here all the time telling us that if we don’t get the infrastructure here [they won’t produce cars here]”¹⁰³, meaning that the automakers were willing to accept the chicken-and-egg problem and not produce hydrogen vehicles. Overcoming this problem would require

¹⁰¹ Recorded interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April 2011.

¹⁰² Recorded interview with GM Hydrogen Engineer, 13th May 2011.

¹⁰³ Recorded interview with Congressional Staffer, 9th June 2011

even more government involvement in helping to provide the estimated \$200 billion plus (Congress, 2003 p.5) needed to create a hydrogen infrastructure.

In relying on the corporations to commercialise the technology, there was a lack of recognition that what may be the best for society may not be reflected in company policy – the research may not be commercialised because it is more profitable not to commercialise than to commercialise. Such self-interest is evident in the fact the partnership included one company who “were not really interested in hydrogen”¹⁰⁴ and did little to research it. In fact, a number of the partner corporations had been accused of technology-stifling through patent encumbrance in the past. For example, GM was accused of limiting the availability of next generation battery technology after it purchased Ovonics, and gained control of its patents, in 1994. Started by Stan Ovshinsky, Ovonics had developed an advanced nickel metal hydride (NiMH) battery that significantly outperformed the lead-acid batteries available at the time, with initial tests extending the range of GM’s EV1 from 90 to 200 miles (Greenberg, 2008). In upping the EV1’s range one of the main problems with electric cars was alleviated, but, instead of heralding the technology, GM crushed the cars and did not pursue the technology (Paine, 2006).

In 2001, GM then sold its interest in Ovonics to its future FreedomCAR partner, Chevron, who reformed the company into Cobasys. Under Chevron’s ownership, Cobasys has suffered from a lack of cash, has upped its minimum order for large scale batteries to 10,000, refused to honour previously-agreed contracts for batteries and sued Panasonic, who were producing NiMH batteries for Toyota, Ford and Honda, for infringing its patents (Boschert, 2006). Chevron’s patents limiting the use of the technology, and that allow the continuation of this behaviour, last until 2014. In light of these events, Ovshinsky has since stated that

“we made a mistake of having a joint venture with an oil company, frankly speaking. And I think it’s not a good idea to go into business with somebody whose strategies would put you out of business, rather than building the business” (Greenberg, 2008).

Considering the issues with the aims and structure of the partnership it is worth exploring how far FreedomCAR has come in the ten years since the beginning of the

¹⁰⁴ Unrecorded interview with oil company executive, 26th April 2011.

partnership to reducing oil dependence and solving the problems associated with oil dependence. Advances towards all of partnership technical goals have occurred (National Research Council, 2010 p.3). For instance, the partnership's 2010 goal of having the cost of fuel cells be \$45kW was narrowly missed, with \$51kw achieved, which is an 80% reduction since 2002 and a 30% reduction since 2008.¹⁰⁵ As such, the partnership (including the automotive partners) still feels that it can have a cost-competitive HFC vehicle on the road around 2015.¹⁰⁶

However, optimism outside the partnership about HFCs is not as bright. One interviewee said that predicting when HFCs would be ready was like "crystal ball gazing" as "there are Three Nobel Prizes between here and fuel cell vehicles. One's on the fuel cell stacks themselves. One's on the storage. And one's on the fuel...it's a technology that is perennially 15-20 years off."¹⁰⁷ Likewise, another interviewee said that "fuel cells are still 15-20 years off. I'm still cautiously optimistic that they will be the long-term solution, but you won't see them before 2035, maybe 2030."¹⁰⁸ More conservatively, an oil industry interviewee said in 2011 that the commercialisation timeframe was "20, 30, 40 years. I don't see it as near term...it's definitely 20-40 years out."¹⁰⁹ Such conservatism is understandable considering that by April 2010 there were only 68 hydrogen fuel stations and 223 fuel cell vehicles in the country (Kreith and West, 2011 p.5).

So, much like at the start of the partnership, the estimates and scientific view of when hydrogen fuel cell vehicles will be ready for private-vehicle use remains uncertain. Yet, even if all of these issues with automotive technology and the chicken and egg problem were swept aside and a hydrogen economy was set up, it would most likely continue many of the problems associated with oil dependence. Because the US does not have the renewable electricity capacity to produce sufficient hydrogen for a national fleet, hydrogen production would either involve using electricity from fossil fuel plants or involve reforming natural gas, both of which would retain issues with CO₂ production and air pollution.

¹⁰⁵ Recorded interview with FreedomCAR Senior Staff, 15th April 2011.

¹⁰⁶ Recorded interview with FreedomCAR Senior Staff, 15th April 2011.

¹⁰⁷ Recorded Interview with Congressional Research staffer, 8th April 2011

¹⁰⁸ Recorded Interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April

¹⁰⁹ Recorded interview with American Petroleum Institute staff, 14th April 2011

Moreover, one potential outcome of the move to hydrogen produced by natural gas would be the utilisation of unconventional gas reserves accessed by hydraulic fracturing (fracking) (Hickey, 2012). Currently highly-touted in US energy circles, fracking involves forcing a slurry of sand, water and chemicals into gas-bearing rock formations to increase pressure and fracture the rock, releasing the gas. This method has been accused¹¹⁰ of contaminating local watertables and producing much more CO₂ than conventional methods of accessing natural gas (Shelley, 2011), which has obvious implications for climate change if the expansion of hydrogen was based on an expansion of fracking. The only problem solved if there was a switch to hydrogen from fracked gas would be import reliance.

Finally, all the above issues raise the question of whether hydrogen fuel cell research constituted a prudent policy to reduce oil dependence and the problems associated with oil dependence. In itself, for the problems raised above, FreedomCAR was insufficient. It wouldn't produce immediate outcomes, it was uncertain from the outset whether it could produce outcomes eventually and it was not known how long the technology would take to come to fruition. Yet, if FreedomCAR was part of a portfolio approach that included more immediate attempts to reduce oil dependence it could be seen as prudent policy in that it is laying the foundations for a future transition to a post-carbon economy. Put more bluntly, if FreedomCAR was accompanied by CAFE or/and other incremental approaches (such as higher gas taxes and encouraging hybridisation) then it would be both sensible and farsighted. However, the incremental approach and the "leapfrog" HFCs research approach were presented as an either/or choice by the executive and the corporate partners; as Spencer Abraham said in 2003

"Addressing our energy problems need not be a matter of tremendous hardship for small, incremental gains...We have within our reach the capability to leapfrog those problems with a wholly new approach to energy" (Schmidt, 2003).

As the previous chapter demonstrated, a modest increase in CAFE was only accepted due to substantial pressure being exerted within the political system.

In only adopting a leapfrog approach, FreedomCAR constituted a bet on

¹¹⁰ Fracking is currently the subject of a contentious politico-scientific debate in both the US and the UK.

“technologies [that] are largely in early stages of development. On the one hand, they evict other potential efficient technologies, such as the already mentioned Partnership for a New Generation of Vehicles. On the other hand, their outcomes are uncertain in terms of emission reduction potential, cost, and timing” (Blanchard and Perkaus, 2004 p.1997).

In terms of reducing oil dependence, then, FreedomCAR was not a prudent policy; it was a risky pipedream that staked too much on an uncertain payoff and that detracted from the possibility of immediate action and, at the same time, gave the executive and the corporate partners a “green” PR image that covered them politically from more substantial changes.

Conclusions

The entry of the Big Three into the FreedomCAR partnership was motivated by a desire to delay (perhaps indefinitely) CAFE standards, to improve their environmental credentials and to be well placed in terms of intellectual property should a rival firm make a breakthrough.¹¹¹ All of these interests were realised through the FreedomCAR partnership, although, as the previous chapter attests, the automakers still faced CAFE increases. The various ways in which the automakers were able to realise their interests is represented in figure 6-3.

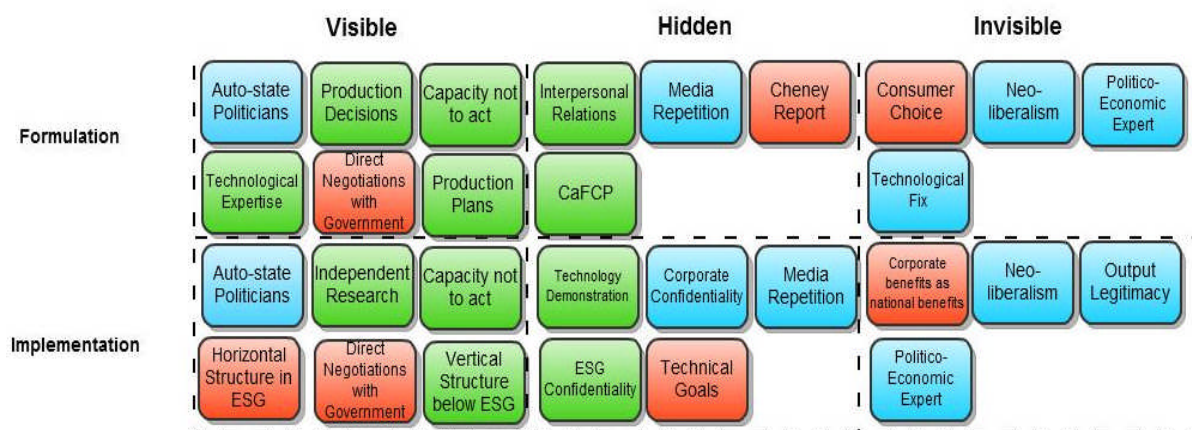


Figure 6-3: Mechanisms of influence in FreedomCAR

(Note: Green represents direct action, blue indirect action/structural conditions and red a mixture of the two.)

At the formulation stage, very few of the mechanisms seen in the CAFE chapter and commonly associated with the political arena were operating. With the exception of

¹¹¹ Recorded interview with GM Hydrogen Engineer, 13th May 2011.

the attempt to promote hydrogen in the media and through CaFCP, the FreedomCAR partnership was largely formed without inside or outside lobbying tactics. In this respect, invisible power discourses were not substantially deployed (consumer choice with regards to SUVs being an exception) but instead passively ensured the legitimacy of the creation of a public-private partnership. Moreover, in a rather bizarre manner, many aspects of the embedded neoliberal discourse empowered the corporations with regards to hydrogen. Even though FreedomCAR represented a very large intervention by the government in the market, the commercialisation of both hybrids and fuel cell cars were decisions that were left to the corporations because making such decisions was not seen as the responsibility of the government; belief in the market (and their control of production decisions) gave the corporations the ultimate decision in whether to implement hydrogen technology or not.

Primarily, however, the creation of the FreedomCAR partnership was due to automaker hidden and visible power; it was a case of both elite decisions in closed spaces and having to rely on corporations to realise certain goals because they control production and investment decisions. So the high-level and opaque negotiations that formed the Cheney report, and which the automakers were involved in, was pivotal in the policy U-turn that saw the Bush government move from scrapping PNGV to replacing it with a largely similar entity. Likewise, the entire premise of the partnership was to support and help the auto corporations to facilitate a transition to a hydrogen economy.

At the implementation level, the mechanisms of influence were primarily in the form of visible power. Like with the implementation stage in the CAFE standards, this shift is unsurprising as the partnership gave the automakers authority to directly make decisions – it vested them with visible power. But additionally, mechanisms of hidden and invisible power served to legitimate the partnership and insulate it from accountability in the political arena. Most notably, the adoption of technical goals served as an important way in which functional accountability was avoided.

Finally, while hydrogen may turn out to be the energy carrier of choice – it may have a positive outcome for oil dependence – and the FreedomCAR partnership may well have played a decisive and pivotal role in changing, and improving, the US by eliminating US oil dependence, it will have done so in a manner that was inherently

oriented towards the interests and decisions of a select group of major corporations; it would have been a high-risk bet, whose risk was amplified by the manner in which it was placed, that paid off. Yet, even in this situation, millions of gallons of fuel would still have been burnt in the intervening years while waiting for the long-term payoff when implementation of current technology could have had an immediate benefit. Ultimately, during the Bush period, the hydrogen fuel cell program worked as a distraction from more immediate-term solutions. As a policy designed to reduce US oil dependence it was little more than a pipe dream.

Bibliography

- Abraham, S. 2002. *FreedomCAR Announcement, January 9, 2002* [Online]. Available: <http://www.archive.org/details/freedomcar2002> [Accessed 17/03/2012].
- Behrens, L. 2000. In a Surprise Move, House Votes No Funds for Auto Partnership. *Federal Technology Report*, 29/6/2000.
- Behrens, L. 2001a. Bush Plan To Cut Energy R&D Draws Protests From Hill, Advocates. *Inside Energy*, 29/6/2000.
- Behrens, L. 2001b. Major New Hydrogen Program Expected. *Inside Energy*, 27/01/2003.
- Blanchard, O. & Perkaus, J. F. 2004. Does the Bush Administration's Climate Policy mean Climate Protection? *Energy Policy*, 32, 1993-1998.
- Boddie, W. 2002. *FreedomCAR Announcement, January 9, 2002* [Online]. Available: <http://www.archive.org/details/freedomcar2002> [Accessed 17/03/2012].
- Boehlert, S. 2002. The Future of DOE's Automotive Research Programs. *Hearing by the House Committee on Science*. Washington D.C.: Government Printing Office.
- Boschert, S. 2006. *Plug-in Hybrids: The Cars that Will Recharge America*, British Columbia, New Society Publishers.
- Bossel, U. 2003. The Physics of the Hydrogen Economy. *European Fuel Cell News*, 10, 1-16.
- Brown, M. B. 2001. The Civic Shaping of Technology: California's Electric Vehicle Program. *Science, Technology & Human Values*, 26, 56-81.
- Bush, G. W. 2003a. Energy Independence Remarks, February 6th. *Administration of George W. Bush 2003*. Washington D.C.: Government Printing Office.
- Bush, G. W. 2003b. *Hydrogen Fuel Initiative Can Make "Fundamental Difference", February 6th* [Online]. Available: <http://georgewbush-whitehouse.archives.gov/news/releases/2003/02/20030206-12.html> [Accessed 01/03/2012].
- Bush, G. W. 2010. *Decision Points*, St Ives, Virgin Books.

- California.gov. 2004. *Governor Arnold Schwarzenegger's California Hydrogen Highway Network Action Plan* [Online]. Available: <http://www.hydrogenhighway.ca.gov/vision/vision.pdf> [Accessed 08/04/2012].
- California.gov. 2005. *SB 76 Information* [Online]. Available: <http://www.hydrogenhighway.ca.gov/facts/sb76info.pdf> [Accessed 08/04/2012].
- Campbell, J. 2003. *Hydrogen Delivery Technologies and Systems: Pipeline Transmission of Hydrogen: A Presentation to the EERE* [Online]. Available: http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/hydrogen_pipeline_pres_air_liquid.pdf [Accessed 08/03/2012].
- Cannon, J. 1994. Hydrogen Vehicle Programs in the USA. *International Journal of Hydrogen Energy*, 19, 905-909.
- CARB. 2003a. *Final Regulation Order: 2003 Amendments* [Online]. Available: <http://www.arb.ca.gov/regact/zev2003/fro.pdf> [Accessed 14/11/2012].
- CARB. 2003b. *Vehicle Manufacturers, Dealers and the State of California Resolve Litigation Impacting Zero Emission Vehicle Regulation* [Online]. Available: <http://www.arb.ca.gov/msprog/zevprog/zevlitigation/exhibitc.pdf> [Accessed 14/11/2012].
- Cefo, N. 2009. *Two Cents Per Mile: Will President Obama Make it Happen with the Stroke of A Pen?*, Maryland, Nevlin LLC.
- Chapman, R. 1998. *The Machine That Could: PNGV, A Government-Industry Partnership*. Washington D.C.: RAND Corporation.
- Cischke, S. 2001. *Corporate Average Fuel Economy (CAFE) Reform. Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Cole, C. 2003. *FreedomFuel To Tackle Hydrogen; Program Bolsters FreedomCAR. Octane Week*, 03/02/2003.
- Collantes, G. O. 2006. *The California Zero-Emission Vehicle Mandate: A Study of the Policy Process, 1990-2004*. California: University of California, Davis.
- Congress 1996. *Hydrogen Future Act. United States Statutes at Large*, 110 STAT. 3304, P.L. 104-271.
- Congress 2003. *The Path to a Hydrogen Economy. Hearing by the House Committee on Science*. Washington D.C.: Government Printing Office.
- Congressional Quarterly 2008. *US Department of Energy Announces Two Utility Companies join FreedomCAR and Fuel Partnership*. CQ Federal Department and Agency Documents.
- Culver, R. 2002. *Department of Energy's FreedomCAR: Hurdles, Benchmarks for Progress, and Role in Energy Policy. Hearing by the House Committee on Energy and Commerce*. Washington D.C.: Government Printing Office.
- Davis, T. 2001. *Corporate Average Fuel Economy (CAFE) Reform. Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Dawson, C. 2002. *Fuel Cells: Japan's Carmakers Are Flooring It* [Online]. *Business Week*. Available:

- http://www.businessweek.com/magazine/content/02_51/b3813084.htm
[Accessed 08/03/2012].
- Department of Energy 1999. Report to Congress on the Status and Progress of the DOE Hydrogen Program. Washington D.C.: Department of Energy.
- Department of Energy. 2001a. *Budget Highlights: FY2002 Request* [Online]. Available: <http://web.archive.org/web/20021011063025/http://cio.doe.gov/DOEBudget/Highlight.pdf> [Accessed 15/05/2012].
- Department of Energy. 2001b. *EREN Network News April 11 2001* [Online]. Available: http://apps1.eere.energy.gov/news/archives/2001/apr11_01.html [Accessed 15/05/2012].
- Department of Energy. 2011. *Hydrogen and Fuel Cell Technical Advisory Committee* [Online]. Available: http://www.hydrogen.energy.gov/advisory_htac.html [Accessed 08/03/2012].
- Department of Energy. 2012a. *Compare Side-by-side* [Online]. Available: <http://www.fueleconomy.gov/feg/Find.do?action=sbs&id=16705&id=19813&id=26425&id=15606> [Accessed 18/05/2012].
- Department of Energy. 2012b. *HEV Sales by Model* [Online]. Available: http://www.afdc.energy.gov/afdc/data/docs/hev_sales.xls [Accessed 15/05/2012].
- Devlin, P. 2005. *Public-Private R&D Partnerships Examples* [Online]. Available: http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/mfg_wkshp_devlin.pdf [Accessed 20/04/2012].
- Dicks, N. 2000. Department Of The Interior And Related Agencies Appropriations Act, 2001. *Congressional Record*. Washington D.C.: Government Printing Office.
- DOE Energy Efficiency and Renewable Energy 2002. Strategic Plan. Washington D.C.: Department of Energy.
- Foley, J. 2001. *H2: Driving the Future*, London, Institute for Public Policy Research.
- FreedomCAR and Fuel Partnership 2006. Partnership Plan. Washington D.C.: Department of Energy.
- FreedomCAR Partnership 2002. Partnership Plan. Washington D.C.: Department of Energy.
- Freedonia. 2002. *Hybrid & Competitive Automotive Powerplants* [Online]. Available: <http://www.freedoniagroup.com/pdf/1617smwe.pdf> [Accessed 10/05/2012].
- Fuchs, D. 2005. Commanding Heights? The Strength and Fragility of Business Power in Global Politics. *Millennium Annual Conference*. London.
- Garman, D. 2002. The Future of DOE's Automotive Research Programs. *Hearing by the House Committee on Science*. Washington D.C.: Government Printing Office.
- Gates, M. 1993. Clean-car Effort Carries Many 'Ifs'; Big 3 Hope Work Stalls CAFE Push 1993. *Automotive News*, 04/10/1993, p.41.

- Goodhue, D. 2004. CARB admits ZEV Plan was Unworkable; Needed Changes beyond Suit. *Inside Fuels and Vehicles*, 12/02/2004.
- Government Accountability Office 2000. *Results of U.S.-Industry Partnership to Develop a New Generation of Vehicles*, Washington D.C., Government Accountability Office.
- Greenberg, J. 2008. *The Edison of our Age: Stan Ovshinsky and the Future of Energy* [Online]. Available: <http://www.theenergyroadmap.com/futureblogger/show/1030-stanford-ovshinsky-and-the-future-of-energy-interview-part-1> [Accessed 26/04/2012].
- Hais, M. & Winograd, M. 2009. *The Overhaul of the Domestic Auto Industry and Its Parallels with the Republicans' Problem* [Online]. Available: http://www.huffingtonpost.com/michael-hais-and-morley-winograd/the-overhaul-of-the-domes_b_180973.html [Accessed 20/03/2012].
- Hall, C. 2003. Fuel-Cell Caravan in Central Valley; Hydrogen Car Rally Promotes Technology. *San Francisco Chronicle*, 15/05/2003.
- Hickey, C. K. 2012. *Fracking Gives Hydrogen Fuel Cells New Life* [Online]. Available: <http://science.kqed.org/quest/2012/08/08/fracking-gives-hydrogen-fuel-cell-new-life/> [Accessed 15/02/2013].
- Hoffmann, P. 2002. *Tomorrow's Energy: Hydrogen, Fuel Cells, and the Prospects for a Cleaner Planet*, Cambridge, MA, MIT Press.
- Holland, G. & Provenzano, J. J. 2008. *The Hydrogen Age: Empowering A Clean-Energy Future*, Layton, Utah, Gibbs Smith Publishers.
- Holt, R. 2008. Auto Industry Financing and Restructuring Act. *Congressional Record*. Washington D.C.: Government Printing Office.
- HTAP. 1999. *Realizing a Hydrogen Future* [Online]. Department of Energy. Available: <http://www.hydrogen.energy.gov/pdfs/brochure.pdf> [Accessed 08/03/2012].
- Hughes, J. 1997. American automakers want new technology to also mean profits. *Associated Press*, 12/11/1997.
- Kildee, D. 2000. Department Of The Interior And Related Agencies Appropriations Act, 2001. *Congressional Record*. Washington D.C.: Government Printing Office.
- Kreith, F. & West, R. 2004. Fallacies of a Hydrogen Economy: A Critical Analysis of Hydrogen Production and Utilization. *Journal of Energy Resources Technology*, 126, 249-257.
- Kreith, F. & West, R. E. 2011. "Cash for Clunkers": A Historical Analysis of the U.S. Quest for Independence From Foreign Oil. *In: ASME 2011 International Mechanical Engineering Congress & Exposition*, 2011 Denver, Colorado. ASME, 1053-1062.
- Larrue, P. 2003. *Lessons Learned from the Californian ZEV Mandate: From a "Technology-Forcing" to a "Market-Driven" Regulation* [Online]. Available: <http://cahiersdugres.u-bordeaux4.fr/2003/2003-07.pdf> [Accessed 18/03/2012].
- Larson, J. 2012. *Fuel Cells* [Online]. Available: http://www.larson.house.gov/index.php?option=com_content&task=view&id=616&Itemid=57 [Accessed 09/05/2012].

- Levin, C. 2002. *FreedomCAR Announcement, January 9, 2002* [Online]. Available: <http://www.archive.org/details/freedomcar2002> [Accessed 17/03/2012].
- Lindblom, C. E. 1977. *Politics and Markets: The World's Political Economic Systems*, New York, Basic Books.
- Little, A. D. 2002. *Guidance for Transportation Technologies: Fuel choice for Fuel Cell Vehicles* [Online]. Available: http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/fuel_choice_fcvs.pdf [Accessed 08/03/2012].
- Loveday, E. 2011. *EPA rates Tesla Roadster at 111 MPGe* [Online]. Available: <http://green.autoblog.com/2011/05/26/epa-rates-tesla-roadster-at-111-mpge/> [Accessed 26/04/2012].
- Loveless, B. 1999. White House, Detroit May Add Light-Truck Issues To PNGV. *Federal Technology Report*, 03/06/1999.
- Luger, S. 2000. *Corporate Power, American Democracy, and the Automobile Industry*, Cambridge, Cambridge University Press.
- Mann, S. 2000. Green, Clean and Smooth: Meet the Hydrogen Car. *The Age*, 19/06/2000.
- Mateja, J. 2000. Lighter Weight Leads to Higher Mileage for DaimlerChrysler's ESX3 Prototype. *National Post (Canada)*, 17/04/2000.
- McKay, P. 2001. Ford has a Greener Idea: Henry Ford brought the World the Internal Combustion Engine. Now, his Great Grandson is pledging to consign it to History. *The Vancouver Sun*, 29/05/2001.
- Misiak, J. 2004. *Defining the Future: Potential Enhancements to the FreedomCAR Program* [Online]. Available: http://web.mit.edu/10.391J/www/proceedings/FreedomCar_Misiak2004.pdf [Accessed 23/04/2012].
- National Academy of Sciences 2005. *Review of the Research Program of the FreedomCAR and Fuel Partnership: First Report* Washington D.C., National Academies Press.
- National Academy of Sciences 2010. *Review of the Research Program of the FreedomCAR and Fuel Partnership: Third Report* Washington D.C., National Academies Press.
- National Research Council 2001. *Review of the Research Program of the Partnership for a New Generation of Vehicles: Seventh Report*, Washington D.C., Transportation Research Board, National Academy Press.
- National Research Council 2010. *Review of the Research Program of the FreedomCAR and Fuel Partnership: Third Report*, Washington D.C., National Academies Press.
- Nauman, M. 2000. Alternative-fuel Cars are Hot at Detroit Auto Show. *San Jose Mercury News*, 13/01/2000.
- Ogden, J. 2002. *Review of Small Stationary Reformers for Hydrogen Production*. New Jersey: Princeton University.
- Paine, C. 2006. *Who Killed the Electric Car?* USA: Sony Pictures Classics.

- Parry, J. 2000. Fuel Cell Cars Nearer. *Weekly Times*, 05/07/2000, p.61.
- Pfeffier, D. A. 2006. The Myth of the Hydrogen Economy. *The Mountain Sentinel*.
- Rajan, S. C. 2004. A Fine Balance: Automobile Pollution Controls in California. In: DuPuis, E. M. (ed.) *Smoke and Mirrors: The Politics and Culture of Air Pollution*. New York: New York University Press.
- Rohde, P. 2002. Schwarzenegger Seeks Federal Aid For California Hydrogen Corridor. *Inside Fuels and Vehicles*, 09/11/2002.
- Romm, J. 2004. *The Hype about Hydrogen: Fact and Fiction in the Race to Save the Climate*, Washington D.C., Island Press.
- Romm, J. 2006. The Car and Fuel of the Future. *Energy Policy*, 34, 2609-2614.
- Schmidt, M. 2003. Abraham Takes on Fuel Cell Plan Critics. *Inside Energy*, 10/04/2003.
- Scott, D. & Hafele, W. 1990. The Coming Hydrogen Age: Preventing World Climatic Disruption. *International Journal of Hydrogen Energy*, 15, 727-737.
- Shelley, T. 2011. *The Health Effects and Other Hazards of Hydrofracking* [Online]. Available: http://wwwnew.upstate.edu/cnymph/pdf/shelley_hydrofracking_04-13-11.pdf [Accessed 15/02/2013].
- Shinnar, R. 2003. The Hydrogen Economy, Fuel Cells, and Electric Cars. *Technology in Society*, 25, 455-476.
- Sigfusson, T. I. 2006. *Iceland: The Hydrogen Island* [Online]. Available: <http://www.oecd.org/dataoecd/13/11/36746599.pdf> [Accessed 15/05/2012].
- Sigfusson, T. I. 2007. Hydrogen Island: The Story and Motivations Behind the Icelandic Hydrogen Society Experiment. *Mitigation and Adaptation Strategies for Global Change*, 12, 407-418.
- Stoffer, H. 2001. FreedomCAR: Real solution or tax waste? *Automotive News*, 10/06/2002.
- Stoffer, H. & Stoll, J. D. 2001. PNGV frets over Bush Budget Cuts. *Automotive News*, 16/04/2001, p.3.
- Stoffer, H. & Truett, R. 2003. Fuel Cells Face Obstacles, Despite Bush's Aid; Solving Technical Challenges will take more than Money. *Automotive News*, 03/02/2003.
- Sullivan, C. 2009. Has Schwarzenegger's Hydrogen Highway Gone Bust? . *Greenwire*, 10/03/2009.
- Sununu, J. E. 2000. Department Of The Interior And Related Agencies Appropriations Act, 2001. *Congressional Record*. Washington D.C.: Government Printing Office.
- Tierney, J. 2003. Hydrogen-Vehicle Test: More Hot Air in Washington? *The New York Times*, 6/04/2003.
- Tuckey, B. 1997. Focus moves from electric power to hydrogen fuel cell; Mid-Week Motor Market. *The Age*, 14/05/1997.
- Veziroglu, T. N. 2000. Quarter Century of Hydrogen Movement 1974–2000. *International Journal of Hydrogen Energy*, 25, 1143-1150.

- Wald, M. 1993. Government Dream Car; Washington and Detroit Pool Resources To Devise a New Approach to Technology. *The New York Times*.
- Wards Automotive. 2012. *U.S. Vehicle Market Share* [Online]. Available: <http://wardsauto.com/keydata/historical/UsaSa28summary> [Accessed 24/04/2012].
- Wells, J. 2002. Lessons Learned from Previous Research Could Benefit FreedomCAR Initiative Statement. Washington D.C.: Government Accountability Office,.
- Whitehouse.gov. 2005. *President Tours Hydrogen Fueling Station, Discusses Research* [Online]. Available: http://georgewbush-whitehouse.archives.gov/news/releases/2005/05/images/20050525-1_p44934-078jasjpg-515h.html [Accessed 23/04/2012].
- Yacobucci, B. 2003. *The Partnership for a New Generation of Vehicles: Status and Issues*. Washington D.C.: Congressional Research Service.
- Yacobucci, B. 2008. *Hydrogen and Fuel Cell Vehicle R&D: FreedomCAR and the President's Hydrogen Fuel Initiative*. Washington D.C.: Congressional Research Service.

Chapter 7 – Discussion

In exploring the role of corporations in two oil dependence policies of the George W. Bush administrations, using a broad actor-centred framework of power, substantial influence for particular corporations in the two case studies was found. In fact, the interests of these corporations took precedence over many national goals and, by weakening the two case study policies, contributed to the endurance of long-standing national (and international) problems. In light of these findings, this chapter serves to draw out the wider implications of these examples of corporate influence by directly answering the research questions, and so is organised with a section on each research question. As such, this chapter discusses the extent of corporate influence, how corporations were influential (and what methods they used), why corporations were influential, and the societal impact of corporate influence in turn. In addition, this chapter highlights the academic contribution of this thesis, the limitations of this research and possible potential future research on the basis of this thesis.

To what extent were corporate interests influential in US oil-dependence policy evolution under Bush?

Specific corporate interests – the Big Three US automobile companies in particular – were significantly influential in both case studies. These companies were able to represent their interests, and have their interests represented, in national policy to a very large extent. In addition to the automobile companies, several supermajor oil companies – ExxonMobil, Shell, BP, Chevron and ConocoPhillips – were involved in the FreedomCAR case study, with two utility energy companies joining late into the case study timeframe. However, because these companies came later to the partnership, and their actions with regards to the case study occurred within the bounds of the partnership's confidentiality, their involvement was less documentable and so less documented by the thesis. However, from what information was available, the oil companies were involved in hyping hydrogen in the early 2000s and, at times, co-operated with the auto companies in trying to sell the viability of a hydrogen economy future. For the oil companies, involvement in the partnership was beneficial in that it allowed the cultivation of a progressive, environmental image. Nevertheless, as was seen in the case of lack of oil company involvement in CAFE

standards and the lack of automobile company involvement in the opening of ANWR oil resources to exploitation, when a corporation did not view an issue to be directly related to their economic interests they did not get involved. These corporations, then, worked as profit-oriented political actors that pursued goals with returns specific to them.

In addition to the specificity of corporate concern, there was also a national element to corporate involvement.¹¹² Foreign automakers, while involved in both of the case studies, had their interests relegated to the periphery in the formulation of policy. In CAFE standards, foreign automaker interests were poorly represented in EISA, with the shift to a variegated market disadvantaging them and through being frozen out of government loans. In the case of the FreedomCAR partnership foreign automakers were excluded entirely. Yet, in a strange contrast, international oil companies (BP and Shell) were included in the FreedomCAR partnership. One interviewee explained the difference in treatment as because researchers for the foreign auto companies

“live in Japan, their money stays in Japan and all the profits go back to Tokyo; that is not the US government’s mission...now with the oil companies it’s a bit different...they are more international...The profits do eventually go home to Britain or Holland, but the American units [of BP and Shell] do put a lot of money into the pockets of American investors and taxpayers [through their investments and research infrastructure in the US.]”¹¹³

In this respect, then, in both the executive and the legislature there was an implicit protectionism regarding where economic benefits accrued in the formulation of policy. Similarly, foreign automakers had little impact on either of the implementation parts of the case studies – having reasonably similar goals to the US automakers in CAFE implementation and being entirely excluded with FreedomCAR. The only real place that foreign automakers had significant power to alter situations is the marketplace, which they did successfully use through the manufacture and sale of hybrids. In future policies such foreign automaker marketplace decisions made during the Bush period could play an important role; much like the Big Three encouraged the move

¹¹² Hansen and Mitchell (2000) note the lower likelihood of foreign firms, compared to domestic firms, in engaging in overt actions (such as lobbying or campaign contributions) in the political arena.

¹¹³ Recorded interview with GM Hydrogen Engineer, 13th May 2011

towards SUVs in the 1980s and 1990s that set the stage for the changes in the 2000s.

Like foreign automakers, other relevant and concerned organised interests – particularly environmental and safety groups – had little impact on the formulation of the two case studies; their actions (or actions of people on behalf of them) did not result in their interests being realised to any significant degree. With FreedomCAR, this lack of impact was due to the fact that there was relatively little opposition; other groups, like the public, did not pay that much attention to the issue, apart from viewing it as continued corporate welfare. With CAFE, however, these public interest groups were very interested but had a limited impact.

The limited impact of these groups was partially due to the corporations having far greater resources; corporations could hire revolving door lobbyists, had better contacts with the media, could fund think-tanks and could set up astroturf groups to a far greater extent than these interest groups. For instance, Ford and GM spent \$21 million in 2007 – the year of EISA – and Sierra Club, Public Citizen, the Union of Concerned Scientists and other organizations who lobbied for higher CAFE standards collectively spent \$917k spent in the first six months of 2007. Likewise, these public interest groups had fewer supporters in Congress because they were not major employers in a number of constituencies and instead had to rely on individuals with a similar ideological commitment as them, such as Rep. Henry Waxman (D-CA), to champion their causes. In this respect, these public interest groups were simply out-gunned in the political arena. But additionally, public groups also had low levels of access to the Bush administration; as one interviewee said “the [Bush] administration was not a friendly venue for environmentalists”.¹¹⁴ For instance, in the crafting of both the 2002 NAS report on CAFE standards and the Cheney report the number of meetings with environmental groups was significantly outweighed by the meetings with corporate groups.

More generally, in both CAFE standards and FreedomCAR, environmental groups were poorly positioned in the discursive environment. As mentioned in chapter three, the focus on GDP growth – on “economic health” – effectively marginalised environmental concerns. Including environmental concerns was not seen as part and

¹¹⁴ Recorded interview with environmental think-tank staff, 11th April 2011.

parcel of ensuring the welfare of the nation, but as an extra cost. Hence, FreedomCAR was designed along the lines that hydrogen technology would work as a technological substitution to the gasoline ICE that would simply allow the continuation of the high consumption American way of life. Combined, all three of these points – lack of resources, lack of access and marginalising discourses – help explain why “environmental groups played no role in the Bush administration's formulation of energy policy”.¹¹⁵

In the implementation stage environmental interests played even less of a role. FreedomCAR did not include such groups as part of its structure, so they could have had no impact at all on the case study even if they were sufficiently concerned to focus their limited resources on FreedomCAR. In CAFE, NHTSA did accept comments from environmental groups but, as chapter five indicates, environmental concerns were effectively organised out in their rule-making procedure. Outside of the formulation and implementation of policy – outside of what is traditionally considered political – these groups had no powers to subsequently alter policy. So, unlike foreign automakers, environmental groups capacity to exercise power only really existed in Congress.

In sum, American automobile corporations – GM, Ford and Chrysler – were very influential in both the formulation and implementation of the case studies; their interests were of paramount importance in the construction and execution of CAFE and FreedomCAR. Moreover, these interests were realised despite the differing interests of foreign automakers and the opposed interests of public interest groups. As such, the case studies reveal the American automobile corporations to have been powerful political actors in the Bush period.

1. Through what methods did the influence of corporate interests work?

Primarily this question concerns the indirect actor-centred methods of corporate influence (in the case study conclusions, these mechanisms of influence were mainly in blue boxes). From the case studies, four main ways – one primarily visible power mechanism and three primarily hidden power mechanisms – can be identified in which this representation of corporate interests occurred. Turning first to the visible

¹¹⁵ Recorded interview with environmental think-tank staff, 11th April 2011.

power mechanisms, elected officials engaged in “particularistic, reelection-oriented behavior” (Lee, 2003 p.715) by supporting corporations who were major employers in their constituencies. In the case studies within Congress there were several bipartisan caucuses supporting the auto industry and the hydrogen industry that consisted of Congressmen drawn from auto plant constituencies and which had the aim of giving voice to the concerns of the auto industry within Congress. This form of corporate power does not come from politicians being bought (which is suggested in the PAC literature), instead the manner of this visible power mechanism is, as Lowery (2007 p.36) says, “government officials serving the democratic demands of constituents, a wholly legitimate type of interaction within democratic political systems”.

Among the auto plant Congressmen who sought to represent the industry in a democratically-legitimate way, the most notable was John Dingell (D-MI). Dingell, “having a strong constituency in auto jobs”¹¹⁶, was instrumental in the defeat of earlier efforts to raise CAFE standards, has held important positions on relevant Congressional committees, and has been seen as protecting the auto industry since first being elected in 1955. As one corporate executive put it

“he guides us very nicely, and when he helps us it’s only because he can see that the help is a nudge, not a push, to keeping a strong auto industry, in the sense of jobs and economic interests.”¹¹⁷

Assistance, then, from local politicians went beyond a hands-off support on votes on bills and by working through other formal mechanisms of the political arena, to behind-the-scenes signalling and communication. As a case in point, behind-the-scenes communication and co-operation can be seen in the Hill-Terry bill, which offered limited CAFE standards, get-out clauses and financial support for the automakers. The industry and Michigan representatives both pushed the Hill-Terry bill from the outset, with the automakers taking the chance to represent their support as evidence they “openly and aggressively supported CAFE legislation that serves both the environment and consumers” (McCurdy, 2007) and thus head off higher CAFE standards that were in the offing. Moreover, local politicians did not shy away from being linked with the corporations, as can be seen in Fig. 7-1.

¹¹⁶ Recorded Interview with Senior Chrysler staff, 16th June 2011

¹¹⁷ Recorded Interview with Senior Chrysler staff, 16th June 2011



Figure 7-1: Rep. Miller (R-MI) with Ford CEO Alan Mulally

Source: Rep. Miller's website (2012)

Yet, the connection between a politician and a constituency-based industry can go beyond purely re-election-oriented behaviour. Politicians, not working as pure rational actors, can adopt a local pride and self-identification with regards to a major industry, particularly if the politician is originally from the constituency state. This self-identification with certain industries works in the form of a politician supporting their “team”. Such behaviour was, for example, evident in an interview with a staffer from a Pennsylvania district, who kept a supply of miniature bottles of oil from a famous local well to give to visitors. The prime example in this thesis of this behaviour occurred in the FreedomCAR case study, where former Michigan Senator and then Secretary of Energy Spencer Abraham worked very closely with the automakers on FreedomCAR to their benefit even while, as an appointee, there was no re-election incentive. So, in both FreedomCAR and CAFE, then, the auto corporations benefitted both from local politicians perceiving support for major constituency employers and the interests of their constituents as one and the same, and from goodwill and affection from certain politicians. The former point likely works fairly

broadly for corporations, with one interviewee saying “generally speaking government representatives will support those from their constituency”.¹¹⁸

Moving to the three hidden power mechanisms, first the auto corporations were empowered by the passage of employees between government and corporate employ; by people moving through the revolving door. The most high profile automotive revolving door case in the Bush era was Andrew Card, who was Bush’s Chief of Staff and was, prior to this role, the CEO of the American Automobile Manufacturers Association and a GM Vice President. However, revolving door personnel were present in many stages of policy evolution. NHTSA had two former automotive staff working for it in 2010, and there was a long-standing trend of former top NHTSA officials going to work for the automobile industry; one former NHTSA administrator, Diane Steed, even headed the automobile astroturf group, the Coalition for Vehicle Choice.

In fact, interpersonal relations with corporations were pervasive in the Bush administration (Coen et al., 2010 p.25). George W. Bush himself, as well senior cabinet figures such as Dick Cheney and Condolezza Rice, had held previous high-ranking roles in the oil industry. Through high-ranking roles in the banking, insurance, pharmaceutical, chemical manufacture and utility industries the majority (13 out of 16) of the Bush cabinet were millionaires and had an average wealth of \$10.9 million (Mesler, 2001).

Furthermore, moving more to a direct role, the auto corporations also flexed their financial muscle to hire people with good political interpersonal connections which these people could exploit for the automakers. These revolving door lobbyists were former staffers in key committees or with key Congressmen, former Congressmen or even former Presidential appointees. The hiring of such revolving door lobbyists was seen in the CAFE chapter, with Ford hiring 50, and General Motors 74, revolving door lobbyists while EISA was being debated (Center for Responsive Politics, 2007a, b). Although other interest groups can also benefit from the revolving door – for instance, Joan Claybrook moved from being NHTSA Administrator to President of Public Citizen – the lesser scope (and resources) of these operations mean they have fewer possible employees who could go through the revolving door (in either

¹¹⁸ Recorded interview with Toyota staff, 11th May 2011.

direction) and fewer financial resources to recruit people, which is particularly important in the revolving door marketplace as “lobbying salaries are typically several times higher than public sector salaries” (Vidal et al., 2010 p.2).

The existence of the revolving door and other interpersonal relations between corporations and members of government is one of the few (non-exclusive) ways in which the degree of access afforded to the automobile corporations can be explained. For instance, the move from PNGV to FreedomCAR showed telling signs of non-formalised backroom discussions between the auto corporations and the government that effectively decided a major part of US energy policy for eight years. As we saw in the previous chapter, the initial moves by the Bush administration were to cut hydrogen funding and to cut PNGV. However, over the course of a few months this decision was first retreated from, with a 48% cut to the hydrogen research budget being excluded at the last minute and claims to trim PNGV being dropped, and then completely reversed, as FreedomCAR was announced and then, a year after FreedomCAR’s inception, had its budget expanded. Invitation to such backroom decision making can be explained as due to the close links between the corporations and government, although a conclusive statement on the importance of interpersonal relations relative to other mechanisms of influence cannot be drawn.

Second, corporations were able to have their interests represented due to the procedural bias of the decision-making approach of the government. In particular, the auto industry benefitted from NHTSA’s use of cost-benefit analysis in setting the CAFE standards. Working to organise certain concerns out (ironically, in the following example, by trying to include them) NHTSA’s 2008 analysis saw the attempt to include non-quantifiable and controversial issues, such as the value of a human life, the cost of ensuring energy security, and the cost of climate change, in its analysis. This approach led the “costs” of increased regulation to be well understood, but the benefits to be poorly so.

Additionally, NHTSA’s procedures relied upon corporate data and corporate product plans. The benefit from NHTSA relying on voluntarily-provided corporate data for the corporations was that they had a confidential avenue for influence where they could pass information (of unknown veracity) that could never be independently

assessed.¹¹⁹ The result of this arrangement was that NHTSA's analysis could not be re-created, that documents pertaining to discussions between NHTSA and the corporations offered scant information as to what was discussed and that the extent to which automakers were truthful or accurate could not be evaluated.¹²⁰ It also resulted in NHTSA's estimation of the "maximum feasible" level of fuel economy being conformed to the predilections of the status quo in the US and to the desires and projects of the automakers. These procedures were the most important part of automaker influence in the CAFE implementation stage, but did not really have broad influence in other areas of the thesis.

Third, corporate claims were widely disseminated by the media, which both helped to win public backing for the automaker position and to indirectly lobby politicians. In both case studies the media released stories that worked in the interest of the American automakers. With FreedomCAR, optimistic assessments of the hydrogen timeframe, supported by coverage of working (but very expensive and of limited durability) hydrogen vehicles, helped create the hydrogen hype that supported and gave legitimacy to the FreedomCAR partnership. Likewise in CAFE, the media repeatedly deployed the safety argument, most notably in a widely-cited 1998 USA TODAY article that concluded that 46,000 people had died as a result of the CAFE standards (Healey, 1999).

All four of these mechanisms show how well-linked the automakers were with other powerful actors and how such linkages can result in greater corporate power. Such linkages may not always work – individual journalists could be particularly independent – but, as chapter three explained, many of these indirect mechanisms of influence are structurally and economically embedded and, thus, are likely to operate for other corporations in other policy areas too.

¹¹⁹ The automakers technological capacity to meet new standards can somewhat be assessed through international comparisons and comparisons to the views on the timeline for a hydrogen economy, however.

¹²⁰ In recognition of the issue in this particular example, NHTSA's post-Bush rulemakings have been based upon information available in the public realm.

1a. What methods did corporations themselves use to represent their interests?

Alongside the indirect representation of their interests, corporations also worked to garner public and political support by taking direct actions in their interests. With regards to this research question, ten main points can be drawn from the case studies. Four of these points – campaign contributions, lobbying, think-tanks and astroturf groups – have been studied, often in isolation, in the interest group literature, as explained in chapter two. The six remaining points concern corporations working as politico-economic actors and which consequently have been overlooked in the interest group literature.

First, again starting with visible power mechanisms, auto corporations represented their interests through lobbying and other direct attempts to pass information to government officials. Primarily working in the CAFE formulation stage, the auto corporations spent millions of dollars on lobbyists and lobbying in order to try to influence legislators during the debates that led up to EISA 2007. Equally, the corporations tried to influence legislative staff and to change their mind, so that they could in turn influence their legislator. As one interviewee noted "these poor staffers rarely got genuine unbiased information, what they normally got was people lobbying them and only giving them one side of an issue."¹²¹ Lobbying also occurred at the implementation level, with GM successfully lobbying NHTSA to set a higher rebound rate in their calculations of CAFE. Outside of these two situations, however, the corporations did not need to lobby because they enjoyed close relations with policymakers. Lobbying, then, while one of the most noticed mechanisms of corporate influence, does not necessarily operate in many dimensions of corporate political activity; to return to Schattschneider's point (1960 p.40) "it is probably a mistake to assume that pressure politics is the typical or even the most important relation between government and business."

Second, the auto corporations gave campaign contributions to politicians in order to shore up political support and to help ensure the re-election of supportive politicians. So, for example, John Dingell's top five campaign contributors from 1989 to present day include Ford, GM and Chrysler, who collectively spent \$726,000 helping him get

¹²¹ Recorded Interview with a former Auto Engineer for US and Japanese Auto Companies, 25th April 2011

elected (Center for Responsive Politics, 2012). In general, however, the autocompanies gave more money to Republicans than Democrats; with the 29 automotive PACs in the 2006 federal elections donating 73% of their \$5.6 million donation total to Republicans (Center for Responsive Politics, 2006c). Such partisanship in donations can be understood as a product of Republican opposition to CAFE – viewing the standards as “anti-business, anti-consumer and too expensive”¹²² – and the more general pro-business positions of the Republicans.

However, unlike what could be assumed from the interest group literature’s focus on PAC contributions, the amount of money that went into campaign contributions was only a fraction of what the Big Three spent on lobbying. In 2006, for instance, the Big Three donated \$1.65 million to Congressional campaigns (Center for Responsive Politics, 2006b), but spent \$37 million on lobbying, which include \$13 million through the Alliance of Automobile Manufacturers (Center for Responsive Politics, 2006a). The degree of expense on lobbying suggests the corporations felt that such lobbying was a worthwhile activity; it had a payoff. Equally, despite prominence in earlier interest group literature, campaign contributions were not a significant avenue of corporate resources and, presumably, influence; if contributions worked to change legislator behaviour significantly then corporations would give more (Ansolabehere et al., 2003). Instead, what contributions did was signal that the giver was an interested or important party whose issues deserved attention (Hall and Wayman, 1990). As one corporate executive said “we give \$50, \$500...and what that tends to give you is access...contributions separate the giver from the non-voting population.”¹²³ A campaign contribution, then, can serve as a marker for possible future attempts to influence, but is not a significant attempt to influence in and of itself.

Third, moving to hidden power mechanisms, the auto corporations gave money to individuals and think-tanks to produce research supportive of their position and that was not tainted by obvious economic self-interest, which it would have been had it come directly from the corporations (Smith, 2000 p.193). This paid-for research provided ammunition for lobbyists, for supportive politicians and for the auto companies themselves. The most notable example of this activity was in the automakers funding of the Competitive Enterprise Institute, and the CEI helping to

¹²² Recorded Interview with Congressional Research staffer, 8th April 2011

¹²³ Recorded Interview with Auto Company Executive, 11th June 2011

produce research that established the safety argument against CAFE standards in the 1980s. This move was very influential over both the short- and long-term. In the short term, the safety argument successfully altered the agenda of the debate in the Bryan bill and contributed to the defeat of the 1990 legislation.

Over a longer term, through media repetition and through the continued work of the think-tanks the safety argument became established truth; the safety argument switched from being a position that politicians argued about, to an argument politicians argued from. This shift in the position of the safety argument was complete when the argument was taken into the centrally-important 2002 NAS, which anointed the argument with political legitimacy as it became established “fact”. Reflecting this shift, one think-tank interviewee said that “the finding about CAFE’s effects on auto safety [in the 2002 NAS] is a finding, rather than a speculation.”¹²⁴ That a minority opinion chapter – the only in the report – disagreed with the finding was something that was left out of the political record (and the interview); that the report itself was still mired in controversy did not stop the safety argument becoming the basis for NHTSA rulemakings, becoming an important point of reference in political debates or being included as a provision in proposed bills by long-term advocates of higher CAFE standards. Through think-tanks, then, the automakers managed to fundamentally alter the terms of the CAFE debate and change the accepted political facts about CAFE standards, size and safety.

Fourth, the auto corporations utilised front and astroturf groups to represent their interests. The purpose of these groups was to give the appearance of widespread public concern, to galvanise the public and to disseminate information to the media, while appearing as a disinterested, neutral party. For instance, the Coalition for Vehicle Choice campaigned very effectively against the Bryan bill in 1990 and the McCain-Kerry amendment in 2002. The CVC employed various advertising and outside lobbying techniques, such as when the coalition set up an online form entitled “Tell your Senators to protect vehicle choice” that would send messages to Senators and that encouraged users to “discuss how higher CAFE standards would affect you, your family and the vehicle(s) you drive” (Coalition for Vehicle Choice, 2001 [emphasis in original]) in their message. Moreover, the CVC was seen as sufficiently independent that it was invited to the 2002 NAS study meetings alongside

¹²⁴ Recorded interview with free market think-tank staff, 8th June 2011

the auto corporations; adding a veneer of independence to the claims of the auto industry. Astroturfing, then, offered the auto corporations a way in which they could attempt to influence the public and policymakers while not appearing to be doing anything.

Moving to the mechanisms of influence that are largely absent in the interest group literature, the case studies showed six different mechanisms – four visible power and two hidden power – in which corporations were able to represent their interests. First, the most notable visible power mechanism exercised by the automakers was making production decisions and plans in line with their interests. Basically, the US automakers represented their interests through building SUVs and then deploying the many methods of persuasion used by almost all modern major corporations to get individuals to buy SUVs. The cumulative impact of these automaker actions was to fundamentally shift the “economic reality” that policymakers worked around; it directly altered society and altered the social foundations of new policy. In its everyday deployment, this mechanism of influence is perhaps both the most significant and, because of the consumer choice discourse, one of the least appreciated manners of corporate political action.

Second, the auto corporations were able to realise their interests by establishing deadlines and goals that they then do not meet and then setting new deadline and goals; to repeatedly kick the can further down the road. Long-term goals worked particularly well, as agreements made with one administration were not a priority for the new administration and so were reneged on without any negative consequences. For instance, President Clinton tried to increase national fuel efficiency by creating the PNGV, instead of pursuing CAFE increases. PNGV had a ten year timeframe and thus making progress on the issue of fuel economy was pushed ten years forward. Yet, after eight years and the removal of the Democrats from the White House, the auto corporations backed out of PNGV and pushed for hydrogen (again on the understanding that FreedomCAR was instead of CAFE), which was meant to kick the can another 10-20 years forward. In these cases, the auto corporations were able to claim they were working on a problem, which allowed them to not tackle the problem right away. Such tactics were clearly highlighted when a GM Vice President argued that, because of having to divert resources to incremental immediate pay-off technologies, “CAFE is actually an obstacle to the realization of this [hydrogen

economy] vision” (Davis, 2001 p.41). This argument was made even despite the fact that the auto corporations had improved engine efficiency, but spent these improvements on increased performance (as seen in fig 5.2). By kicking the can, the automakers were able to continue to produce and profit from SUVs, and so shift CAFE’s political landscape further; it provided a useful tactic for protecting automaker production decisions.

Third, when the auto corporations felt that a policy or an action was not in their interest the corporations would drag their feet, would claim such an action was not feasible and would, essentially, refuse to use their material resources to achieve the political goals of others; part of automaker visible power was the capacity to not act. For instance, as the corporations came nearer to having to deliver on some of the PNGV goals, they started to resist spending money on the PNGV prototypes, making the argument that a family sedan wasn’t what the marketplace wanted. Yet Gore’s offer to include SUVs in PNGV, and so align PNGV with the “direction of the market”, was rejected. Such obstructionism was not a new feature of industry-government relations, with one Senator saying that

“I remember – and I probably should not say this – when cars got 10 miles to the gallon, 12 miles to the gallon, and the auto companies said, “Oh, my God, we really cannot do better, it is impossible.” And they could not make seat belts, and they could not make airbags” (Boxer, 2001 p.20).

Such automaker claims about the lack of the technological possibility of new features, or the lack of market demand, are given extra weight because the view of the auto corporations as having technical and marketplace expertise, with relative inattention being given to the conflict of interest present with their views.

Conversely, when the auto corporations felt that an action or policy was in their interest, they became enthusiastic supporters of it; they took the opportunities presented to them with gusto. So, in contrast to the auto companies’ rejection of Gore’s offer to include SUVs in PNGV and their long-standing rejection of CAFE standards, the auto companies were active supporters of the FreedomCAR partnership, with its lack of commercialisation goals, acceptance of SUVs, longer timeframe and recognition that the technology was high-risk. Such selectivity in action – kicking the can, dragging their feet and charging forward – is particularly

effective in dealing with government due to the endurance of corporate management structures. For example, while GM's interests and goals were relatively stable, government goals changed with elections. Corporations, then, can exploit the fact that they are able to work with regards to much longer (political) timeframes than government's 2/4/8-year views. As such, corporations, in pursuing their interests, can adopt tactics that reflect a changed political environment; they can bend with the times so as to minimise losses in bad situations and maximise gains in good situations, all the time aiming to realise their (primarily financial) interests.

An ancillary benefit for corporations of the constant changing of government personnel is that the claims and arguments made by corporations can be recycled over different administrations. For instance, claims about hydrogen being just around the corner were not met with the scepticism that was warranted by previous automaker investigations into alternative fuel technology.¹²⁵ This recycling gives some of the claims time to become established and shift the terms of the debate, such as the safety argument in CAFE, whereas other arguments, such as the choice argument or the technical feasibility argument, are simply reused in the same format.

Fourth, the automakers were brought in to have discussions with the government about policy so as to directly represent their views and negotiate with government; they were afforded a degree of access that at times bordered on the corporations becoming decision makers, and at other times, saw the automakers become formal decision makers in government policy. The best examples of direct negotiations with the automakers occurred during the genesis of both PNGV and FreedomCAR, whereby the details of the partnership were negotiated in private between the government and the automakers; at these points while the corporations were taking part in decision-making, authority remained with the government. However, in the form of the horizontal structure adopted by FreedomCAR's Executive Steering group the automakers had shared authority over a traditionally-public role in the form of the disbursement of public funds. So, the auto corporations were able to represent their interests through both getting very high levels of access to decision-making spaces and to be formally included – vested with authority – in decision-making spaces.

¹²⁵ The various assortment of alternative fuels that have been explored, and hyped, since 1973 include compressed natural gas, liquid petroleum gas, methanol, ethanol and cellulosic ethanol.

Fifth, moving to hidden power mechanisms, the automakers successfully set the agenda through the demonstration of technology and the production of prototypes. Such technology demonstration was an important part in convincing the public and politicians that the companies were making progress towards goals, and that certain technology options were viable; it gave their claims a material reality. For instance, the move by the auto companies towards hydrogen was accompanied by public demonstrations (and media coverage) of HFC vehicles in order to give the idea of such vehicles as “road ready” and the widespread application of the technology as just around the corner. Thus, one of the ways in which the automakers ensured support for their plans was via giving material evidence of the feasibility of their plans, even if such material cost hundreds of thousands of dollars (as HFC prototypes did) to produce.

Sixth, the automakers were able to put forward certain arguments and make certain claims due to their control of scarce information about their activities and the market due to their technological expertise. For instance, the auto corporations made the claim, which was influential in policy debates to keep PNGV funding, that they had spent \$980 million a year on “PNGV-related research”, which served as a way to prove their commitment to the partnership and as a justification for continued funding. Yet this spending was never independently verifiable and, when looked at in greater (but still not full) detail, was described by the National Research Council (2001 p.10) as “highly subjective” in what it included as PNGV related. The control of such scarce information, then, allowed corporations to selectively reveal information in a manner that manipulated perceptions.

Therefore, in addition to showing indirect represent of corporate interests, the cases also demonstrated a large number of ways in which corporations directly represented their interests. Many of these mechanisms of influence – lobbying, campaign contributions, think-tanks and astroturf groups – are well-represented in the interest group literature. Yet, due to these avenues of influence being often studied in isolation, and only explored to the extent that they influence the political arena, conclusions drawn just from these mechanisms of influence have neglected much of the influence of corporations. Hence, studies on PACs, for instance, have failed consistently to find corporate influence operating through donations to campaigns (Werner and Wilson, 2010 p.265). The points raised in this section

concerning the actions of auto corporations outside of the formal political arena showed how important other mechanisms of influence were in changing both government policy and societal outcomes. Thus, greater attention needs to be given to these mechanisms of influence, alongside the traditional mechanisms identified in the interest group literature, in further explorations of corporate power.

2. Were corporations influential and, if so, why?

How auto corporations were able to have their interests represented only tells half of the story. The success of the tactics used, the arguments used, the access granted and the reasons that other actors helped represent to corporate interests, were all reliant upon the wider discursive and legal environment in which policy evolved. Discussing how the wider context empowered corporations would be rather broad, so only the most important elements seen in the case studies are discussed here. For instance, the legal fiction of corporate personhood is important but was not documented as contributing in any specific way to the case studies and so is not discussed here. In total, six main reasons – one hidden power mechanism and five broader invisible power mechanisms – for the success of corporate interests can be discerned from the case studies.

Starting with the sole hidden power mechanism, the auto corporations were able to have their interests represented successfully due to the privilege of corporate confidentiality as this privilege underlay many of the other mechanisms seen above. Corporate confidentiality is not a privilege the automakers had to fight for, but it was a situation that helped them realise their interests none the less. In the most extreme cases, confidentiality was actually a prerequisite for some mechanisms, such as the use of think-tanks and astroturf groups. Without such confidentiality, particularly regarding the distribution of corporate funds, the links between corporations and these groups would be apparent and the mechanisms would be significantly less effective. In the main, however, corporate confidentiality ensured their continued access to scarce information, which allowed the automakers to manipulate through omission, and by complicating the accountability of the corporations, particularly regarding FreedomCAR's Executive Steering Group.

Moving now to the five invisible power discourses that empowered the auto corporations, the first were widespread neoliberal beliefs in the positive and

normative relationship between the market and the state. On the positive side, the automakers were viewed as conditioned by the market. The consequence of this view is two-fold. First, consumers were viewed as sovereign and the market as a reflection of consumer choice. This belief in consumer choice gave the automakers a powerful tool with which to oppose CAFE standards and PNGV with, which they did, most notably through the Coalition for Vehicle Choice. This discourse was powerful because it aped ideas of democracy and freedom, and so arguing against it would have involved navigating some difficult terrain.

Second, the automakers were able to make decisions in the market, while protected by this view of economic democracy. So, in spite of the fact that the automakers decided to improve performance over fuel efficiency and chose to prioritise the sale of SUVs and large vehicles over smaller vehicles, these decisions were not seen as decisions made by corporations, instead they were perceived as solely the desires of consumers and the product of the decisions of these consumers. While consumers were not absent in this situation and did buy SUVs, the auto companies chose to produce the vehicles (in violation of the spirit of CAFE) and spent a lot of time and money convincing consumers they wanted SUVs as “you have to have compelling marketing to sell vehicles”.¹²⁶ In corporate decisions not being recognised, accountability for the violation of the spirit of the EPCA was lost and the societal shift to SUVs was conferred with a form of cast-iron “democratic” legitimacy. This legitimacy meant that the switch from PNGV was able to be justified on the grounds that it did not reflect the “direction of the market” and that CAFE proponents had to reconcile themselves to the automakers’ blurring of the boundaries between passenger vehicles and light trucks.

On the normative side, neoliberalism contains a claim about the proper relation between the state and the market in that it advocates limited government and a free market. This mainstream normative view was very effective in insulating the corporations from regulation since a consequence of this normative view is that government should not interfere in the auto market. For instance, CAFE standards were subject to claims such as “Congress has no business dictating automotive fuel efficiency. That's a job for consumers, not vote-hustling politicians” (Taylor and

¹²⁶ Over many years, this pressure can become self-sustaining as the auto corporations “make changes that the customer will see, be delighted in, and then demand [next time they buy a vehicle]”. Recorded interview with GM Spokesperson, 6th May 2011.

Doren, 2007). There was also a belief, then, that if the market is allowed to do its job, it will (if consumers wish it to). This idea was deployed less than the positive arguments, but could be seen as partially responsible for Republican antipathy towards CAFE standards and subsequent support of the automakers. In total, neoliberalism provided an anti-regulatory environment that worked well to hide many aspects of corporate power and to shield the automakers from greater regulation.

The second invisible power reason why corporations were successful was a view of the national interest as maintaining current jobs and GDP growth. This conception of the national interest positioned corporations well, allowing them to claim that proposals were “job-killing” and to rally political opposition to such proposals on the grounds that it will hurt societal well-being. For example, in 2003, Senator Domenici (R-NM) spoke of his happiness at the defeat of the “job-killing anti-safety” McCain-Kerry CAFE amendment (Domenici, 2003 p.S9890). Likewise, while NHTSA was finalising new CAFE standards in 2008, the Alliance of Automobile Manufacturers was claiming that the proposals would kill 82,000 jobs (Shunk, 2008). What is most interesting about these claims is that they were being made while the Big Three were shedding jobs due to competition with foreign firms and their smaller, more fuel efficient cars; the Big Three had lost 215,000 jobs collectively between 2000-2006 (Smith, 2006 p.7). The focus on growth and jobs – which was also a long-standing feature of Republican rhetoric (Smith, 2007 p.15) – allowed automakers to scare politicians into thinking that the automaker-opposed policy would primarily hurt the public by hurting the corporations.

However, these first two discourses – the free market and a view of growth as the national interest – are contradictory and combined in a way that further empowered the corporations. So, when the financial crisis of 2008 hit and both GM and Chrysler were faced with bankruptcy the principles of non-intervention, and allowing the free market to operate according to the invisible hand, were discarded; Schumpeter’s idea of the “creative destruction of the market” was reined in so as to preserve jobs and to bolster declining GDP. So, with CAFE (and to an extent with FreedomCAR), free marketism was used as a justificatory mechanism for non-intervention when the corporations did not need, nor want, intervention. Yet when GM and Chrysler faced bankruptcy they were rescued with a far greater intervention than was on the cards

previously.¹²⁷ Bush even tried to justify this intervention utilising a somewhat tortured logic of rescuing the free market through intervention, saying that “I have abandoned free market principles to save the free market system” (CNN, 2008). In their combination, then, these two ideas worked to promote an environment whereby the auto corporations got the best of both worlds in terms of selective intervention and non-intervention.

Third, the automakers were given a privileged position on the policymaking table because of a view of the major corporation as “the politico-economic expert” in a capitalist democracy (Fuchs, 2005b). This view, like their control of scarce information, gave weight to their pronouncements on technology and the marketplace. It was also one of the main reasons the FreedomCAR partnership was formed in the manner it was. FreedomCAR, through the ESG, had the automakers deciding which technological paths to pursue and what research would benefit the country, rather than a panel of outside experts or even a broader panel that allowed the participation of US start-ups.

Similarly, the auto corporations benefitted from the view of them as major stakeholders in certain areas of regulation. The view of the corporations as stakeholders led to their inclusion in, and consultation throughout, the policy-making process. So, for example, in deciding the CAFE standards, the auto corporations communicated a great deal with NHTSA. While NHTSA stressed that it wasn't exclusive in whom it communicated with – that it met “with all stakeholders” – it was contacted by the autocompanies to a much greater extent than other groups and communicated, confidentially, with the autocompanies. Moreover, CAFE standards directly impacted upon basic environmental issues – such as air pollution and global warming – where everyone (even citizens of other states) would be considered stakeholders, yet it is only those who were organised, cognizant and aware of the rule-making who could effectively communicate with NHTSA or that NHTSA could meet with. The understanding of corporations as stakeholders and politico-economic experts, then, helps explain why corporations were listened to to a larger degree than other actors in the policy evolution of both case studies.

¹²⁷ Somewhat ironically, had the car companies accepted Bryan bill CAFE standards they would have been in a far better position to compete with foreign automakers in the higher-oil-price market of the 2000s. As one interviewee said, these companies weren't “in trouble because [they were] smart”. Interview with Congressional Staffer, 11th May 2011.

Fourth, the automakers were empowered by notions of output legitimacy taking precedence over input legitimacy. Like being viewed as stakeholders and experts, output legitimacy facilitated corporate involvement in government decision making as their involvement was meant to allow the achievement of public goals. This notion of output legitimacy was most present in FreedomCAR and the inclusion of the automakers, but was also evident in NHTSA's operating procedures – whereby the corporations were involved in confidential discussions and had the rule-making process based on information they submitted on the grounds that it would allow better policy to be made. Thus, the notion of output legitimacy served as an important cover for corporate involvement in nominally democratic decision-making processes and procedures.

Fifth, corporate interests were successfully represented because they fitted well within, and consciously utilised, the sound science discourse. The sound science discourse served two main functions for the corporations. The first function was to allow the construction of an official science supportive of business goals and of the executive position and the dismissal of any scientific position opposed to the official science. Such construction was evident in the creation of the 2002 NAS report, in NHTSA's cost-benefit analysis, in the deployment of Jevons' Paradox in debates, and, more generally, with executive, and industry, scepticism towards climate change. In order to support such construction, other scientific viewpoints had to be marginalised. In the main, such marginalisation was done by relying on simplistic, partial and "common sense" arguments that were easily repeatable and so easy to disseminate to a wide audience. For instance, the safety argument was premised on "simple physics" – in a collision, all things being equal, a heavier object will deform a lighter object. This common sense and simply-expressed viewpoint undercut more nuanced and complex views that sought impartiality and fairness in considering points. Hence, the minority chapter in the NAS study, which expressed the view that an issue "is complex, ambiguous, poorly understood, and not measurable by any known means at the present time", (National Academy of Sciences, 2002 p.117) was left out of the political record. This use of sound science, then, moved scientists into a weak position if they express any level of scientific doubt and thereby allowed a scientific position supportive of automaker interests to be built.

The second function of the sound science discourse was to focus policy on

supporting advanced technological solutions to societal problems in a manner that serves to hide the political decisions that were available. As Žižek (2009 p.25) argues

“confronting ecological problems requires making choices and decisions – about what to produce, what to consume, on what energy to rely – which ultimately concern the very way of life of a people; as such they are not only not technical, but are eminently political in the most radical sense of involving fundamental social choices”.

Such appreciation and reflection of the fundamentally political nature of these choices is not apparent, for example, in Cheney’s exhortation, while announcing a large expansion in fossil fuel drilling, that “conservation may be a sign of personal virtue but it is not a sufficient basis for a sound, comprehensive energy policy” (Benedetto, 2001). Likewise, the implicit model of the hydrogen economy was a replication of the current US transportation system¹²⁸, which is marked by high private car ownership, inefficient energy usage, urban sprawl and weak public transport infrastructure. The championing of FreedomCAR, then, avoided broader questions about the desirability or sustainability of such a system, which is internationally unique in its widespread high use of energy. In both of these functions, sound science helped the corporations develop a scientific high-ground that protected their interests.

Additionally, corporations were supported in their use of this discourse because Republican policy-makers were actively being urged, behind the scenes, to make use of sound science tactics, particularly in regards to global warming. Revealed in a 2002 leaked memorandum from political strategist Frank Luntz to Republican leaders, Republicans were reminded that

“the most important principle in any discussion of global warming is your commitment to sound science. Americans unanimously believe all environmental rules and regulations should be based on sound science and common sense. Similarly, our confidence in the ability of science and technology to solve our nation's ills is second to none. Both perceptions will work in your favor if properly cultivated” (as quoted in McGarity, 2003 p.899).

¹²⁸ Recorded interview with American Petroleum Institute staff, 14th April 2011

Likewise, reflecting the FreedomCAR-CAFE tradeoff and neoliberal discourses, Luntz wrote that “we need to emphasize how voluntary innovation and experimentation are preferable to bureaucratic or international intervention and regulation.”

Thus, many of the reasons why corporations were successful in having their interests represented underlie how they represented their interests and had their interests represented. The auto corporations could rely on already-existing societal discourses and privileges that decreased the cost, and increased the likelihood of success, in pursuing the representation of their interests. With the invisible power discourses mentioned above, the automakers were structurally empowered and so able to realise their interests to a far greater extent than had the discursive environment been more neutral, or even hostile. As such, these mechanisms are another important aspect of corporate power.

3. What was the impact of the inclusion of corporate interests in the policy-evolution process?

The inclusion of the interests of the American automobile corporations had a large impact upon the two cases studies, and on the goals associated with these case studies. The most notable impact of their inclusion on both case studies was the continuation and worsening of US oil dependence. While neither policy could have seen an end to US oil dependence in the timeframe of this study, they could have begun to make an impact. Instead, CAFE standards were continually delayed and FreedomCAR pursued unhelpful goals.

With CAFE standards, the inclusion of corporate interests saw a legislative deadlock that lasted from 1990 to 2007. In helping to ensure this legislative deadlock, the corporations gave themselves room to use fuel economy improvements on increasing performance and to sell profitable SUVs. The cumulative impact of the inclusion of corporate interests in this policy area can be seen in the lowering of proposed CAFE increases, whereby the 1990 attempted increase in CAFE standards proposed by the Bryan Bill would have seen many manufacturers having to achieve 40 mpg by 2000, rather than the 35 mpg by 2020 that EISA 2007 finally settled on.

Similarly, American automaker involvement in PNGV delayed the widespread deployment of new technology that could have helped reduce US oil dependence. The refusal of the automakers to comply with the spirit of the partnership and to carry the policy through under President Bush meant that hybrid technology was not significantly deployed in the US market by the US automakers. By contrast, Toyota and Honda both introduced hybrid vehicles that had greater efficiency than conventional vehicles and that could link into future, non-oil, technology. Both the US automakers refusal to deploy technology and their opposition to CAFE standards will have a drag effect on US oil dependence as such moves also contribute to poor fleet fuel efficiency over the medium-term future; vehicles sold in the 2001-2007 period will continue to be used for the next 10-20 years and will work as a drag on realised fuel economy.

When CAFE increases were finally secured, they came with many concessions to the auto corporations. Not only were the increases “exceedingly modest”¹²⁹ but EISA 2007 also offered the Big Three billions worth of grants and low-interest loans; it opened the public purse so that it could help subsidise losses incurred by the US corporations. EISA, through shifting to a size-based standard for calculating CAFE, also freed the Big Three from having to produce more fuel efficient small cars and instead had a greater impact on the more fuel efficient foreign automakers. In doing so, the shift to an attribute standard effectively cemented the place of the SUV in both policy and society, thereby ensuring the continuation of the US automakers’ business model.

Unfortunately for the US automakers, the business model that they had adopted was not particularly robust, and their actions (and government policy inaction) helped the US automakers continue down a path that would see two of the Big Three go bankrupt. Their SUV-focus made the US automakers very vulnerable to later oil price rises and their refusal to deploy hybrid technology cost them both potentially high-selling models and the company prestige that went with hybrids such as the Toyota Prius. So, somewhat ironically, the inclusion of US automaker interests in policy could have not been in the long-term interests of the corporations; getting the policies they asked for allowed the US automakers to continue to shoot themselves in the foot.

¹²⁹ Recorded interview with environmental think-tank staff, 11th April 2011.

With FreedomCAR, corporate involvement in the formulation of policy saw the federal pursuit of a technology that required major breakthroughs, decades of research and that, if the technology was made both sufficiently cost-competitive and durable, would have required an overhaul of the entire US transport fuel infrastructure. At the same time, there was no requirement for the deployment of currently available technology. Corporate involvement, then, pushed US research policy towards spending time on research with uncertain payoffs and limited real world applicability to the detriment of other technologies with more definite and immediate payoffs. In arguing for such a situation, the auto corporations simultaneously dismissed small improvements in fuel efficiency as too difficult and endorsed a policy that required a number of breakthrough technologies and an overhaul of the entire transport infrastructure as a reliable and sensible strategy. Similarly, while working at the state level, other potentially useful policies were also headed off by the work of the auto corporations; most notably California's ZEV mandate and its 1990s experiment with electric vehicles.

Finally, on a slightly different note, at the implementation level of the FreedomCAR partnership, the inclusion of the Big Three occurred with little public oversight or democratic accountability. So not quite an outcome, but more of a procedural issue with the inclusion of the automakers was the horizontal nature of the partnership and the inclusion of corporations on an equal footing to government while exercising the traditionally-public role of the disbursement of public research funding. Through the partnership, then, the corporations effectively "appropriate[d] public authority while evading mechanisms of accountability for the exercise of that authority" (Moran, 2002 p.405), thereby discrediting and neglecting US democratic norms.

The overall impact, then, of the representation of corporate interests was to secure US oil dependence, to give concessions to the US automakers, to allow the US automakers to continue to shoot themselves in the foot, to pursue an imprudent government-funded research strategy, and to neglect democratic norms. In summary, the representation of automaker interests had a negative impact on government policy, the US economy and on society.

Academic Contribution

This thesis has four main original contributions to knowledge; one analytical, one empirical, one methodological and one pertaining to a real world problem. First, it provides an analytical framework for understanding the power of a corporation working as a political actor that reconciles many diverse mechanisms of influence and allows understanding of how these mechanisms can reinforce and complement one another. Such a framework is reasonably rare; as Hacker and Pierson (2002 p.279) state, “a central task for studies of business power is to specify the ways in which influence is exerted in the political process”. In American interest group literature such a framework does not exist at all because both the research questions and the methodology of contemporary interest group researchers encourage a focus on small parts of the policymaking process rather than developing broader explanatory frameworks.

In the political economy literature, however, Fuchs (2005a, 2007) has built a similar framework for exploring the power of a corporation as a political actor in global governance. Like the framework developed here, Fuchs’ framework utilises Lukes’ three dimensions of power (Fuchs, 2007 ch.3), so it also tries to consider agenda setting and the power of ideas. Yet, Fuchs’ account is built solely from the literature and has loosely applied the three dimensions of power to the literature, rather than building from the concept of power up and clearly establishing the assumptions of the framework. The result is that Fuchs’ framework is both uneven in its treatment of power and incomplete in the mechanisms of power included.

As such, the framework of this thesis is an improvement of that of Fuchs in four respects. First, it gives a political economy account of corporate visible power that includes market decision making, rather than a more narrow focus on instrumental power in the political process. Second, it provides an account of hidden power mechanisms that are entirely absent in Fuchs’ framework – think-tanks, for instance, get one footnote in an entire book (*ibid.* p.158). Third, this thesis’s framework advances an understanding of invisible power that considers how actors can be discursively empowered from the start of the period of study (and not necessarily responsible for that empowerment), rather than focusing on how corporations work to improve their image and frame debates; power is understood in the framework as the capacity to realise interests and is not limited to being understood through its

exercise. Finally, by using Gaventa the analytical framework of this thesis avoids the well-documented problem with Lukes' third dimension of power in determining real interests (see Bernhagen, 2007 pp.41-42), which Fuchs' framework still faces. Thus, the analytical framework of this thesis is both an important contribution to US interest group literature, as it allows a better understanding of the influence of corporations, and an improvement on the only political economy framework (Fuchs) for understanding the power of corporate political actors.

Second, in applying the framework, there is an empirical contribution from this thesis. Both case studies concern recent events for which many accounts are yet to be generated. As such, original data was gathered on fieldwork in Washington D.C. and Ann Arbor, Michigan and, alongside primary data, was used in the construction of the chapters; such data allowed the chronology to be understood and causation to be inferred. In particular, the hydrogen case study, owing to its currency, required significant work understanding the history, let alone the role of corporations in this history. In comparison, CAFE, at least, had previously been mapped by accounts of the policy in its 30 year history, although it still required original work for the Bush time period. The thesis therefore provides two new accounts of policies which can be drawn upon in other work.

Third, the thesis develops a novel methodological approach in terms of the casing of corporate power. Linked very much to the assumptions of the analytical framework, this thesis has used cases of policy evolution, rather than policy making. Exploring policy evolution – with its emphasis on how policy ultimately affects society – allows the classical and important questions of interest group literature of “who governs?” – or Held and McGrew's (2003, p.8) “Who rules, in whose interests, by what mechanisms and for what purposes?” – to be returned to from its current narrow focus on “who wins in politics”. Thus, this thesis has helped develop a case study approach that facilitates the exploration of substantive issues concerning US democracy and corporate capitalism, rather than missing them.

Fourth, this thesis shows how corporate power in domestic politics is connected to the international consequences of US oil dependence and the real world problems that such dependence exacerbates. As chapter one showed, the literature on, and politics of, oil dependence primarily considers the issue as one of international relations; it is a supply-side focused literature that seeks solutions to problems of

supply. Yet, as demonstrated by this thesis, US oil demand is both comparatively high, and constructed through domestic politics and the power of corporations in US domestic politics; there are important demand side issues that are missing from, and that complement, the picture. Hence, the final contribution of this thesis is a (partial) understanding of the domestic construction of US oil dependence.

Limitations

The main limitations of this research relate to the difficulty of studying influence generally, and of studying corporate influence in particular. Studying influence involves investigating the existence of an intangible and non-concrete concept through exploring actions and discourse, which necessitates drawing causal relationships between actions, discourses and outcomes; in short, it is like looking for a “black cat in a coal bin at midnight” (as quoted in Cigler and Loomis, 1995 p.28). These causal relationships could be misunderstood because there could be unaccounted-for influences or factors that were missed in the analysis but that were the actual cause.

Equally, establishing that one action (lobbying, PAC contributions, etc) caused another (defeat of a bill) is very difficult and there are many cases that can only be decided through evaluative (and fallible) decisions made by the researcher. For instance, “should the realisation of CAFE standards in 2007 be understood as a decline of the power of the auto industry?” was a question that requires researcher evaluation. In this case, it was decided that economic and political circumstances (increase in the price of oil, the poor financial position of the Big Three, and a Democratic Congress) had altered the CAFE policy environment in a way that weakened the position of the automakers. However, EISA 2007 wasn’t understood as marking a decline of the power of the industry generally because the autocompanies managed to both extract concessions in return for higher CAFE standards and continued to operate powerfully in the other case study. Careful analysis, and sensitivity to data and context, therefore, is necessary to understand and investigate influence.

Studying corporate influence, in particular, is even more difficult due to a great deal of the information not being in the public domain. Corporate confidentiality, and the operation of closed policy-making spaces (such as that underlying the Cheney

report), operate very effectively to limit investigations into corporate influence; perhaps explaining why “there are about a hundred political scientists studying parties and elections for every one studying business and politics” (Wilson, 2006).

This limitation was significantly mitigated by the openness of the American system, the moves to digitise American government material, and the work of non-profit organisations such as the Center for Responsive Politics to sort through and make accessible a lot of the information that is available because of the American system’s openness. In less open systems a far greater reliance on interviews (which would make the problems with interviews and access much greater) and the creation of much more original data would be required. However, despite the openness of the American system, there is a wealth of information that was unavailable for this thesis. Judgement, evaluation and second-hand accounts were thus required to fill in the narrative at points with sparse documentation.

Further Studies

This thesis has covered many different issues and raised many questions which could provide the groundwork for further research. Primarily the most direct further studies from this thesis could utilise the analytical framework and policy evolution cases to study other instances of corporate power in the US; other policy areas could be explored for corporate power. Fig 7-2 is a general framework for such studies that brings together some of less policy-specific mechanisms of influence seen in the case studies (the safety argument, for instance, is very CAFE-specific).

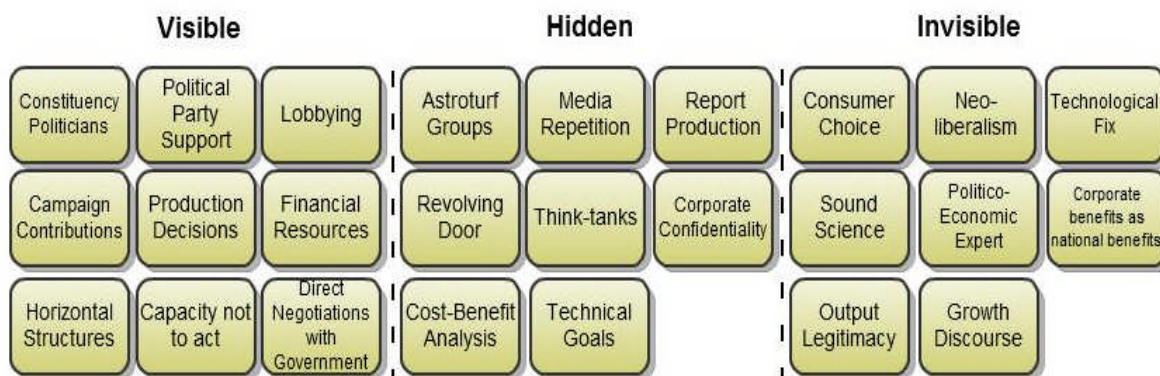


Figure 7-2: Generic Framework of Corporate Power

Extending the scope of the work more, this framework could serve as a useful guide for exploring corporate power in other national or international political arenas. However, some mechanisms will be more applicable in different contexts than others – for instance, sound science may not be an established political discourse, nor cost-benefit analysis an established practice in a particular national context.

Equally, a direct follow-up to this thesis – a research project that explored CAFE standards and FreedomCAR in the Obama period – could be very interesting. Such a study would encounter both the difference in Republican and Democratic Presidents and the impact of the bankruptcies of General Motors and Chrysler on the power of these corporations. Perhaps, in light of these changes, such a study would reveal some very different corporate-government dynamics than were present during the Bush period.

Conclusion

In exploring the two case studies, this thesis found that a significant degree of influence was coming from the Big Three automakers, with the result that US oil dependence was not challenged in the Bush period. The thesis also documented how automaker power worked through many direct and indirect mechanisms – only some of which had been covered in the interest group literature – and which was successful, in part, due to the discursive environment that corporations worked in and had helped to shape. In order to account for these mechanisms of influence, this thesis developed a novel analytical framework for understanding how corporations working as a political actor can be powerful, which was built using Gaventa's forms of power, a wide array of literature and with some of the case study analysis. This analytical framework allowed the exploration of the different manners in which power can work and helped show the interlinkages between different mechanisms of influence. It is this analytical framework and the method for applying that is the primary contribution of the thesis and which, as shown in the preceding section, could be used for further studies of corporate power.

Bibliography

Ansolabehere, S., De Figueiredo, J. & Snyder, J. 2003. Why is there so little money in US Politics? *The Journal of Economic Perspectives*, 17, 105-130.

- Benedetto, R. 2001. Cheney's Energy Plan Focus on Production. *USA TODAY*, 01/05/2001.
- Bernhagen, P. 2007. *The Political Power of Business: Structure and Information in Public Policy-Making*, New York, Routledge.
- Boxer, B. 2001. Corporate Average Fuel Economy (CAFE) Reform. *Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Center for Responsive Politics. 2006a. *Automotive Lobbying Spending 2006* [Online]. Available: <http://www.opensecrets.org/lobby/indusclient.php?id=M02&year=2006> [Accessed 07/08/2012].
- Center for Responsive Politics. 2006b. *Automotive PAC Contributions 2006* [Online]. Available: <http://www.opensecrets.org/pacs/industry.php?txt=M02&cycle=2006> [Accessed 07/08/2012].
- Center for Responsive Politics. 2006c. *Automotive Sector Summary* [Online]. Available: <http://www.opensecrets.org/pacs/industry.php?txt=M02&cycle=2006> [Accessed 20/08/2012].
- Center for Responsive Politics. 2007a. *Ford 2007 Lobbyists* [Online]. Available: <http://www.opensecrets.org/lobby/clientlbs.php?id=D000000182&year=2007> [Accessed 01/12/2011].
- Center for Responsive Politics. 2007b. *General Motors 2007 Lobbyists* [Online]. Available: <http://www.opensecrets.org/lobby/clientlbs.php?id=D000000155&year=2007> [Accessed 01/12/2011].
- Center for Responsive Politics. 2012. *John Dingell PAC Contributors* [Online]. Available: <http://www.opensecrets.org/politicians/contrib.php?cid=N00001783&cycle=Career> [Accessed 07/08/2012].
- Cigler, A. & Loomis, B. 1995. *Interest Group Politics*, Washington D.C., Congressional Quarterly Press.
- CNN. 2008. *Interview with President Bush* [Online]. Available: <http://edition.cnn.com/TRANSCRIPTS/0812/24/se.03.html> [Accessed 16/08/2012].
- Coalition for Vehicle Choice. 2001. *Tell your Senators to Protect Vehicle Choice* [Online]. Available: <http://www.vehiclechoice.org/wash/cafetp.html> - accessed through http://lobby.la.psu.edu/_107th/126_CAFE_Standards_2/Organizational_Statements/CVC/CVC_Email.htm [Accessed 17/08/2012].
- Coen, D., Grant, W. & Wilson, G. 2010. *The Oxford Handbook of Business and Government*, Oxford, Oxford University Press.

- Davis, T. 2001. Corporate Average Fuel Economy (CAFE) Reform. *Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Domenici, P. 2003. Energy Policy Act of 2003. *Congressional Record*. Washington D.C.: Government Printing Office.
- Fuchs, D. 2005a. Commanding Heights? The Strength and Fragility of Business Power in Global Politics. *Millennium - Journal of International Studies*, 33, 771-801.
- Fuchs, D. 2005b. Commanding Heights? The Strength and Fragility of Business Power in Global Politics. *Millennium Annual Conference*. London.
- Fuchs, D. 2007. *Business Power in Global Governance*, Boulder, Colorado, Lynne Rienner Publishers.
- Hacker, J. S. & Pierson, P. 2002. Business Power and Social Policy: Employers and the Formation of the American Welfare State. *Politics & Society*, 30, 277-325.
- Hall, R. L. & Wayman, F. W. 1990. Buying Time: Moneyed Interests and the Mobilization of Bias in Congressional Committees. *The American Political Science Review*, 84, 797-820.
- Hansen, W. L. & Mitchell, N. J. 2000. Disaggregating and Explaining Corporate Political Activity: Domestic and Foreign Corporations in National Politics. *The American Political Science Review*, 94, 891-903.
- Healey, J. 1999. Death by the Gallon. *USA TODAY*, 02/07/1999.
- Held, D. & McGrew, A. 2003. *The Global Transformations Reader*, Cambridge, Polity Press.
- Lee, F. E. 2003. Geographic Politics in the US House of Representatives: Coalition Building and Distribution of Benefits. *American Journal of Political Science*, 47, 714-728.
- Lowery, D. 2007. Why Do Organized Interests Lobby? A Multi-goal, Multi-context Theory of Lobbying. *Polity*, 39, 29-54.
- McCurdy, D. 2007. *Alliance of Automobile Manufacturers Responds to Dinosaurs of Detroit* [Online]. Available: <http://www.thetruthaboutcars.com/2007/08/alliance-of-automobile-manufacturers-prez-defends-orgs-cafe-stance/> [Accessed 22/08/2012].
- McGarity, T. O. 2003. Our Science is Sound Science and their Science is Junk Science: Science-Based Strategies for Avoiding Accountability and Responsibility for Risk-Producing Products and Activities. *University of Kansas Law Review*, 52, 897-937.
- Mesler, B. 2001. *A Cabinet That Looks Like (Corporate) America* [Online]. Available: <http://www.corpwatch.org/article.php?id=11458> [Accessed 05/12/2012].
- Miller, C. 2012. *The Blue Oval is back* [Online]. Available: <http://candicemiller.house.gov/press-release/blue-oval-back> [Accessed 28/11/2012].
- Moran, M. 2002. Understanding the Regulatory State. *British Journal of Political Science*, 32, 391-413.

- National Academy of Sciences 2002. *Effectiveness and Impact of Corporate Average Fuel Economy Standards*, Washington D.C., National Academy Press.
- National Research Council 2001. *Review of the Research Program of the Partnership for a New Generation of Vehicles: Seventh Report*, Washington D.C., Transportation Research Board, National Academy Press.
- Schattschneider, E. E. 1960. *The Semisovereign People*, Hinsdale, Illinois, The Dryden Press.
- Shunk, C. 2008. *Automakers Say New CAFE Standards Will Cost 82,000 Jobs* [Online]. Available: <http://www.autoblog.com/2008/07/01/automakers-say-new-cafe-standards-will-cost-82-000-jobs/> [Accessed 07/08/2012].
- Smith, G. 2006. *Reforming Corporate Average Fuel Economy (CAFE) Standards. Hearing by the Senate Committee on Commerce, Science, and Transportation*. Washington D.C.: Government Printing Office.
- Smith, M. A. 2000. *American Business and Political Power: Public Opinion, Elections, and Democracy*, Chicago, University of Chicago.
- Smith, M. A. 2007. *The Right Talk: How Conservatives Transformed the Great Society into the Economic Society*, New Jersey, Princeton University Press.
- Taylor, J. & Doren, P. V. 2007. *Don't Raise CAFE Standards* [Online]. Available: <http://www.cato.org/publications/commentary/dont-raise-cafe-standards> [Accessed 16/08/2012].
- Vidal, J. B. i., Draca, M. & Fons-Rosen, C. 2010. *Revolving Door Lobbyists* [Online]. London: London School of Economics. Available: <http://personal.lse.ac.uk/draca/images/revolving.pdf> [Accessed 11/06/2013].
- Werner, T. & Wilson, G. 2010. Business Representation in Washington D.C. In: Coen, D., Grant, W. & Wilson, G. (eds.) *The Oxford Handbook of Business and Government*. Oxford: Oxford University Press.
- Wilson, G. 2006. Thirty Years of Business and Politics. In: Coen, D. & Grant, W. (eds.) *Business and Government: Methods and Practice*. Michigan: Barbara Budrich.
- Žižek, S. 2009. *First as Tragedy, then as Farce*, London, Verso Books.

Chapter 8 – Conclusion

“The President believes that it’s an American way of life, that it should be the goal of policy-makers to protect the American way of life. The American way of life is a blessed one...the President considers Americans’ heavy use of energy a reflection of the strength of our economy, of the way of life that the American people have come to enjoy.”

Ari Fleischer (2001)

While the research questions were answered in the previous chapter, an explicit answer to the motivating question of this research project remains, namely “Why, despite the numerous problems stemming from it and high-level political concern, have successive US administrations failed to enact policies that reduce oil dependence?” The Bush administration is, in fact a good example of this situation; like many administrations before it, and despite some loud rhetoric, the administration failed to substantially improve either US oil dependence or US import reliance. The policies that were put in place were limited; with either very low technically-achievable goals or ridiculously-high technically-difficult goals. Equally, effective policies that have worked well in other countries, such as gasoline taxes, were again ignored.

While the thesis can only shed limited light on why previous administrations failed to reduce US oil dependence, it can point quite directly to three of the reasons why the Bush administration failed to enact policies that successfully reduced US oil dependence. The first reason was the influence on domestic politics of corporations. As this thesis has demonstrated, these corporations – particularly the Big Three automotive corporations – have used a variety of methods to represent their interests, to alter the terms of the debate and to promote policies not harmful to their interests; they worked as powerful political actors to realise their private interests at the expense of the public interest. Because the interests of these corporations are aligned with the oil-dependent status quo, they successfully worked to maintain the status quo.

Second, the thesis demonstrated that alongside the automakers, elements of the political establishment worked to help auto interests in many different arenas and in many different ways. The story told by this thesis is not simply one of external actors

bending the government to its will, but the government being receptive to, and inclined toward, the interests of corporate actors. This receptiveness helped bolster the corporations efforts to realise their interests and allowed the automakers to operate even more powerfully to maintain the oil dependent status quo.

Third, the discursive environment in which policy evolved supported the status quo, supported corporate political actions and supported the indirect political support the automakers received. Of all of the discourses mentioned in chapters 3 and 7, the most notable of these for oil dependence were neoliberalism and GDP growth. These two discourses served to broadly validate the status quo, to direct attention to certain issues while neglecting others and justified the major political and economic roles that corporations were playing. These discourses, alongside the many others mentioned in this thesis, imbued the avoiding of the problems of oil dependence with legitimacy and, by lack of challenge, ensured that they continued to operate after the Bush period.

So, the failure of the Bush administration to institute effective policy that deals with oil dependence can be understood as caused by opposition from powerful actors in society, by the representation of auto interests by other actors internal to the government, and by exclusionary discourses that discount oil dependence and the problems associated with it. These reasons are not the whole story as to why the Bush administration failed (or other previous administrations have failed), nor are they exclusive from one another; yet, understanding these points – which have been neglected by many – and critically re-evaluating the reasoning and actions supporting them is necessary to deal with many of the serious and pressing ecological, health and social problems that exist for both the US, the international system and the world stemming from US oil dependence. If progress on the substantial real world problems caused by US oil dependence is going to be made, many of the configurations of power seen in the Bush administration must be challenged.

Bibliography

Fleischer, A. 2001. *Press Briefing by Ari Fleischer, 07/05/2001* [Online]. Available: <http://georgewbush-whitehouse.archives.gov/news/briefings/20010507.html> [Accessed 18/12/2012].

Appendix A – Ethical Consent Form

Title of Research Project:

The Impact of Business on US Oil Dependence Policies under George W. Bush

Name of Researcher:

Terry Hathaway

Please mark the appropriate box

- | | |
|---|--------------------------|
| 1. I agree to take part in the above research project. | <input type="checkbox"/> |
| 2. I agree for the data collected from me to be used in future research | <input type="checkbox"/> |
| 3. I confirm that I have read and understand the information sheet explaining the above research project and I have had the opportunity to ask questions about the project. | <input type="checkbox"/> |
| 4. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. In addition, should I not wish to answer any particular question or questions, I am free to decline. | <input type="checkbox"/> |
| 5. I understand that my responses will be kept strictly confidential. | <input type="checkbox"/> |

If you do not wish to be recognizable in any publication resulting from this research leave the following box unmarked and your answers will be strictly anonymised.

- | | |
|--|--------------------------|
| 6. I consent that my name can be identified or identifiable in the publication(s) or report(s) that result from the research. | <input type="checkbox"/> |
|--|--------------------------|

Name of Participant

Date

Signature

Terry Hathaway

Researcher

Date

Signature

To be signed and dated in presence of the participant

Copies:

Once this has been signed by both parties the participant should receive a copy of the signed and dated participant consent form and the information sheet. A copy of the signed and dated consent form should be kept with the project's main documents which must be kept in a secure location.

Appendix B – Example of the CAFE Arguments

The consumer choice argument, safety argument and Jevons' paradox have all been put in bold in this article. Seeing as the author also works for the Cato Institute, this article can also be seen to tie into hidden power use of thinktanks.

Killing Drivers, Increasing Costs

BYLINE: Doug Bandow – Senior Fellow, Cato Institute

SECTION: The American Spectator Online, December 4, 2007 Tuesday

LENGTH: 1495 words

Congress is running out of floor time before the Christmas holiday, but legislators still hope to push through the mishmash energy bill. The measure, which could hit the House floor this week, likely will include increased fuel economy standards for American autos. Democratic leaders and the White House alike are backing the proposal in the name of saving energy. But these rules have proved far better at increasing automaker costs and killing drivers than reducing America's dependence on foreign oil.

The desire to save energy seems to bring out the worst in Washington micro-management. Over the years, Uncle Sam has set the speed limit for every road and temperature in every public building in America. In 1975, Congress concocted Corporate Average Fuel Economy (CAFE) standards, which set the average fuel economy to be attained by cars sold by each automaker.

It's a thoroughly nutty approach. First, CAFE put Detroit, America's home auto industry, at a disadvantage because U.S. producers concentrated on the larger cars **that Americans liked to drive**. Japanese exporters primarily produced small cars, which more easily satisfied CAFE. The regulation is one reason stationwagons, once an American favorite, have disappeared.

Today American firms concentrate on light trucks (including SUVs), which outsell autos. The administration's new CAFE rules for light trucks are expected to cost the three U.S. automakers about \$2 billion--and their Japanese competitors nothing.

Second, CAFE is supposed to cut total energy use as people buy the same cars and do the same amount of driving. But CAFE actually creates an incentive to drive more, changing people's behavior.

Increasing mileage requirements lowers the cost of driving. Raising mileage from 20 to 30 mpg would have the same effect as cutting the price of gas from \$3.00 per gallon to \$1.50 per gallon. The marginal cost of driving another mile would fall 50 percent. Yet many of the advocates of increasing CAFE to save energy are the same people who want to raise the gas tax to save energy.

In fact, the National Research Council reported that CAFE "reduces the fuel cost per mile of driving, thereby encouraging faster growth in vehicle travel than would otherwise be the case." Economists Randall Lutter and Troy Kravitz concluded that "By lowering the costs of driving, [CAFE] increases vehicle miles traveled, thereby boosting traffic accidents and congestion. The increase in the costs of accidents and congestion fully offsets and probably outweighs the social benefits resulting from greater fuel economy." The Department of Transportation reports that the number of miles driven by cars and light trucks more than doubled between 1975 and 2000.

Third, meeting CAFE raises automaker and consumer costs by forcing companies to **make cars that people don't want**. Numerous high mileage vehicles are currently available, but many people prefer larger cars for reasons of family size, work requirements, personal comfort, or recreational preference. That has forced U.S. companies to lower prices on smaller autos (often losing money as a result), since hiking sales is the only way to meet CAFE, and increase prices on larger vehicles. Ford reportedly loses money on its cars while making \$8000 per light truck sold.

CAFE's cost to consumers is obvious. Moreover, CAFE likely puts more cars on the road, and more cars mean more driving. Again, price matters: if you reduce automobile costs, more cars will be sold and driven, particularly as second or third vehicles in a family.

But raising prices for lower-income families who need a larger car likely causes some of them to hold onto their older vehicles, which have lower gas mileage and emit more pollution. Which further undercuts the objective of reducing energy consumption.

Fourth, CAFE kills. Weight is destiny when it comes to both conservation and safety. Design modification and materials substitution can make cars lighter and safer, but doing so costs money and it is not easy to do both at the same time. The easiest way to improve mileage is to cut vehicle weight, but reducing the amount of metal surrounding drivers and passengers leaves them more vulnerable in an accident.

In 2002 the National Academy of Sciences found that CAFE kills an extra 1300 to 2600 people a year. Some CAFE advocates suggest that the problem is too many pick-ups and SUVs, which could be pushed off the road entirely with a sufficiently high standard. But there always will be trucks, buses, and other large vehicles plying the roads. Smaller cars will remain more vulnerable in an accident.

What a policy. Observes James Taylor of the Heartland Institute: "More Americans needlessly die on the roads each and every year as a result of these fuel economy standards than have died in Iraq during the entirety of both Gulf wars combined. All of this merely to 'conserve' a little fuel."

But the dumber the idea in Washington, the more support it seems to have these days. And from Republicans as well as Democrats.

The administration, after doing nothing for years, now supports raising CAFE four percent annually. Earlier this year the Senate voted to hike the level to 35 mpg in 2020, up from 27.5 and 22.5 for cars and light trucks, respectively.

The U.S. industry is currently set to spend \$2 billion to comply with new fuel economy rules for light trucks. The Senate bill would cost automakers, who already suffer huge "legacy" costs from previous generous pension and health insurance contracts, about \$114 billion to retool their assembly lines.

Explains Gary Witzenburg of the Car Connection: "Almost no one outside the fuel-economy business understands how incredibly tough, probably impossible, and enormously expensive that really would be. Even Toyota -- whose hybrid-boosted 2006 car and truck CAFEs were 34.4 and 23.7 mpg, respectively -- calls the 35-mpg standard 'very aggressive' and 'difficult to meet,' adding that, 'the time frame is too soon.'" The only way to meet the standard, he adds, "would be to dieselize and hybridize virtually everything -- at an incremental cost (not retail price) of \$5000-\$8000 per vehicle -- and downsize trucks to where they could barely haul the

contents of a homeless auto worker's shopping cart. New emissions standards are making diesels way more expensive, and there's not enough battery raw material on the planet for an all- hybrid fleet."

Yet even accepting the flawed assumptions of the bill's backers, the energy benefits would be minimal. Explains Jerry Taylor of the Cato Institute: "If the Senate's proposed CAFE standard of 35 mpg by 2020 were to become law, proponents believe that it would reduce oil consumption by, at most, about 1.2 million barrels a day. Given that the Energy Information Administration thinks world crude oil production would be 103.8 million barrels a day by 2020, the reduction would be 1.2 percent of global demand and result in a 1.3 percent decline in price-- nowhere near enough to defund terrorists, denude oil producers of wealth, or secure energy independence."

No matter. Sen. Byron Dorgan (D-ND) rhapsodized: "Now, in our vehicles, we have better cup-holders, we have keyless entry, we have better music systems, we have heated seats. It is time that we expect more automobile efficiency."

The main alternative comes from Reps. Baron Hill (D-Ind.) and Lee Terry (R-Neb.), who have introduced what they call a "tough piece of legislation, with no loopholes and no gimmicks." It would maintain separate standards for autos and light trucks, hiking the levels to 35 mpg and 32 mpg, respectively, by 2022. Although only slightly less stringent than the Senate bill, the Hill-Terry legislation was denounced as "feeble" by the Sierra Club.

Actually, the Sierra Club is right. The "moderate" position is to only wreck the industry, kill people, and limit consumer choice more slowly, while having even less impact on energy use. To think that we pay lawmakers to come up with such klunkers.

Rising fuel costs are the best antidote to high energy consumption. As prices rise, people drive less and switch to more fuel-efficient vehicles. Indeed, Sen. Barbara Boxer (D-Cal.) didn't realize the import of her remarks when she chided Transportation Secretary Norman Mineta last year for not unilaterally hiking CAFE standards more: "You are so far behind what's even happening in the marketplace." If so, why not leave the issue up to the marketplace?

Washington has come up with a lot of bad policies over the years. Few are worse than CAFE. If someone in the nation's capital doesn't wake up and fight this counterproductive legislation, we might wake up to find that we have no auto industry left.