Carleton University

Challenging the Deregulation Narrative: A Material Account of Transformation in
Canada and the United States' Trucking Industries and its Implications for an Effective
Politics

A thesis submitted to
the Faculty of Graduate and Postdoctoral Affairs
in partial fulfillment of the requirement for the degree of
Master of Arts

Institute of Political Economy

by

Kurt Rafuse, B.A. (Hons.)

Ottawa, Ontario

May 2011
© 2011, Kurt Rafuse

Library and Archives
Canada

Published Heritage
Branch

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque et
Archives Canada

Direction du
Patrimoine de l'édition

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence
ISBN: 978-0-494-81604-2
Our file Notre référence
ISBN: 978-0-494-81604-2

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

■ ■ ■
Canada

Abstract

Academic accounts of transformation in the Canadian and American trucking industries invariably cite the onset of a deregulatory era in the 1980s as a catalyst for a marked deterioration in the quality of employment available within the industry. I identify this account as being constitutive of a “deregulation narrative” implicit in the scripting of political responses to current working conditions. Drawing primarily on the work of Bruno Latour and Michel Foucault, I argue for an alternative account that emphasizes the materiality to socio-economic transformation. In this respect, I argue that non-human actors should be given *equal* consideration as their human counterparts in accounts of change. I argue that this view to transformation has the potential to yield more effective political solutions by virtue of increasing the number of actors considered in the assembly of current states of affairs.

Acknowledgements

It has been some time since a graduate of Carleton University's Institute of Political Economy has not owed a considerable amount of gratitude to the efforts of Donna Coghill. I am no exception. Donna, I am eternally indebted. See you in purgatory!

A thank you is also in order for Rianne Mahon and Janet Siltanen for their efforts as Directors of the Institute throughout my tenure there. Similarly, I would like to thank Alan Hunt, Carlos Novas and Lisa Mills for making themselves available on such short notice for my defence. Particular gratitude is owed to William Walters for agreeing to supervise this thesis, and for providing some much needed focus to my characteristically broad theoretical interests. My peers at the Institute of Political Economy also deserve acknowledgement for setting such a high standard for my own academic pursuits, and for some much needed relief on the pitch, diamond, and in the pub!

Most importantly, I want to thank my family for their unconditional encouragement and support. In particular, I thank my Dad for inspiring the subject matter of this thesis. I also thank my Mom for instilling in me a critical perspective towards taken-for-granted ways of doing things at an early age, and my Grandma for constantly reminding me that it's ok to ask for help. Finally, I thank my late stepmother Gail, whose selfless dedication to her family in the context her husband's work hours served as a constant reminder as to why the subject matter of this thesis is important.

Table of Contents

Introduction.....	1
The Political Stakes.....	2
The Deregulation Narrative.....	4
Outline	6
Chapter 1	8
Bruno Latour and Actor-Network Theory.....	9
Michel Foucault and Government Beyond the State.....	18
Latour and Foucault.....	21
Summary.....	28
Chapter 2	30
Michael Belzer and Sweatshops on Wheels.....	31
The “Regulatory Era”	37
The “Deregulatory Era”.....	42
Belzer on Technology.....	47
The Deregulatory Era and Its Implications for Politics.....	48
Summary.....	51
Chapter 3.....	52
A Material Account of Policy Formation.....	53
Logistics Technology	63
The Logistics Imperative.....	75
Summary.....	77
Conclusion.....	79
Works Cited.....	83

Introduction

This M.A. thesis is about the relationship between how particular states of affairs are understood to have come about, and the political targets that these understandings suggest. The crux of its argument is accurately captured by a familiar adage from the medical world: “effective prescriptions require accurate diagnoses”. In this respect it stresses the importance of materiality to explanations of socio-economic phenomena. By emphasizing the material, it is argued that alternative and perhaps even complimentary ways of knowing, thinking and talking about how things have come to be will suggest different political strategies for changing them.

This argument finds empirical grounding in an analysis of critical accounts of change in the Canadian and American trucking industries. Following the work of those associated with governmentality studies (see Rose 1999; Dean 1999), I treat these accounts as “intellectual technologies” implicit in the scripting of how current working conditions are understood to have come about, as well as in the prescription of “progressive” political strategies that aim to resist and transform these conditions¹. Based on these accounts, I take issue with a persistent emphasis on the role of state policy in transforming work processes and conditions vis-à-vis economic deregulation over the last three decades. In contrast, I propose understanding this transformation in a way that emphasizes the materiality to socio-economic change. Taking epistemological cues

---

¹ The idea of a “progressive” politics is itself worthy of some qualification. See Graham Lowe’s *The Quality of Work: A People Centred Agenda* (2000) for some preliminary ideas about what a progressive politics might look like in the context of “quality employment”. Given the long hours that characterize work in the trucking industry, the work of feminist political economists on the temporalities of work time and their implications for the balancing of paid and reproductive labour are also useful. See Acker (2006) and Shalla (2007) for a start.

primarily from the work of Bruno Latour (1988, 2005) and Michel Foucault (2007, 2008), I identify the existence of a “logistics imperative” that can be said to script how things are done within the trucking industry. In doing so, I argue that various technological applications are as responsible for the emergence of this imperative as their human counterparts. This being the case, they deserve *equal* consideration in diagnoses of how current states of affairs have come to be. Thus, my modest goal for this thesis is to contribute to the list of actors considered when making reference to the idea of the trucking industry. I contend that populating this list with non-human actors will provide diagnoses that underpin political prescriptions different from, yet complimentary to those that emphasize the state as a target.

The Political Stakes

In contrast to other blue collar industries where automation and the potential for outsourcing has led to widespread claims of employment loss (see Glasmeier and Salant 2006; Rifkin 2004; Noble 1995), truck drivers continue to play an integral role in both their firms and the industry as a whole. A number of metrics are routinely deployed to capture this point. For example, the Canadian Trucking Alliance (2009) estimates trucking companies to be responsible for the employment of 400,000 people in Canada, 260,000 of which are drivers. In the United States, The American Trucking Associations (2010) estimate the equivalent values to be 7.3 million and 3.4 million. In both countries, this makes the trucking industry the single largest occupational category for men (Statistics Canada 2008; Belman, Lafontaine and Monaco 2005).

In terms of reported revenues, the same organizations estimate Canada's trucking industry to be worth over \$65 billion (CTA 2009), while the U.S.'s is pegged at an incredible \$660.3 billion (ATA 2010). These numbers underscore the centrality of trucking to commerce within and between each country. According to Feschuk (2006), 90 percent of Canadian domestic products and foodstuffs are transported by truck, as well as 60 percent of the country's exports and 80 percent of its imports. In the U.S., the American Trucking Associations (2010) find that trucks were responsible for 68.8 percent of total freight tonnage in 2008, with railroads being a distant second at 13.8 percent. Incredibly, a truck is estimated to cross the Canadian-U.S. border an average of every 2.5 seconds (Feschuk 2006).

However, despite the centrality of the trucking industry and its workers to commerce in both countries, the lot of drivers themselves is widely considered to exist in a state of perpetual deterioration stemming back to the early 1980s (Bensman 2009; Conyngham 2005; Belman, Moncaco and Brooks 2004). Transportation scholar Michael Belzer (2000), whose research on the North American trucking industry will be explored in detail in Chapter 2, goes so far as to draw comparisons between current working conditions and 19th century sweatshops. This analogy is based on the existence of three general conditions: below subsistence wages and the associated issue of skilled labour shortages; the requirement for workers to compensate for low wages by working longer hours; and finally, the existence of unhealthy working conditions². In sum, this means that drivers must work excessive hours in unsafe conditions to earn more than a mere

---

² For examples pertaining to each of these characteristics specifically, see Conyngham (2005), Belman Monaco and Brooks (2004) and Apostolopoulos et al. (2010).

subsistence wage³. The sentiments of drivers themselves as it relates to these particular states of affairs is adequately captured by the words of an Ontario-based employee when he claims that “...trucking has gone all to rat shit!” (cited in Feschuk 2006: 29).

The Deregulation Narrative

Needless to say, these conditions have prompted calls for political change from within the industry itself, and amongst social scientists studying it. Unfortunately, academic research supporting this view is rather monolithic in its explanations for current states of affairs, as well as in its political prescriptions. In both Canada and the United States, critical literature is quick to point to the “deregulation” of the trucking industry in the 1980’s as a catalyst for deteriorating working conditions, stagnating wages, increased work hours, and falling profit levels for firms. The actors in this narrative are familiar ones: governments, employees/unions, firms and markets. In this account, truckers and trucking companies are pitted against an ideologically austere state seeking to mobilize competitive market forces towards the selection of “winners” and “losers” in the age of free trade. Hyper-competitive market conditions associated with deregulation are seen as pitting firms against each other in a figurative race to the bottom, as labour costs are shed in the interest of undercutting competitor firms’ shipping rates.

---

³ For example, Canadian truckers’ reported average annual earnings of \$42,000 in 2006 suggest that they are securely ensconced within the North American middle class. However, full-time drivers average 51 hours of work per week, with 56 percent of all full-time workers reporting having worked an average of over 50 hours per week (50 hours or more being the highest category detailed by Statistics Canada). In contrast, only 22 percent of all full-time workers averaged more than 50 hours per week while still averaging over \$51,000 in annual earnings (Statistics Canada 2008). Research on U.S. truckers suggests that 60 hour weeks are not uncommon (Belman, Monaco and Brooks 2004; Belzer 2000), despite all drivers averaging just over \$39,000 per year (Bureau of Labor Statistics 2009).

The ubiquity of this perspective would not be problematic if it could be said to have yielded substantial change, but unfortunately it has not. This being the case, I suggest populating the list of actors considered when making reference to transformation in the industry with a number of non-human contributors. In doing so, I show that these actors' interactions with their human counterparts have generated rationales – or in Foucault's (2008) terms, “veridical regimes” – that form the basis for both how the industry operates, as well as for state policies that regulate it. This leads me to identify the emergence of a “logistics imperative”. By this, I mean the emergence in the 1980/90s of an expectation that trucking firms not only perform tasks associated with storing and moving freight, but that they also deploy cutting edge logistics technologies in the process of doing so. With the support of various forms of “expertise” from the fields of economics, mathematics and engineering, these expectations can be said to have intensified competition within the industry, which has had negative impacts on the quality of employment available within it. Thus, in contrast to the identification of ideologically motivated states, my intention is to show how veridical regimes are produced through particular techno-human networks.

Politically, my research suggests that engagements with state policy are not in and of themselves adequate prescriptions for industrial discontent. Rather, the way people think and talk about technology and its role in regulating/scripting work processes, as well as the forms of knowledge that it produces for decision making need to be emphasized as a first step in any political strategy. This does not mean state policy plays no role. Indeed, I argue that more effective state policy might be derived from a more dynamic account of exactly what it is that needs to be regulated. Further to this, by

identifying and historicizing the actors involved in bringing about particular states of affairs, the contingency of their associations are revealed. This has the effect of destabilizing what initially appears to be inevitable, while simultaneously opening the door to considering completely new alternatives.

Outline

This thesis will proceed over the course of three chapters. The first will outline the theoretical dimensions to my research. Drawing primarily from the work of Bruno Latour (1988, 2005) and Michel Foucault (2007, 2008), it outlines a case for the consideration of non-human actors in accounts of social phenomena. Having established that the social is made of material networks constituted by connections between human and non-human actors, I then argue that these techno-human networks produce regimes of veridiction (i.e. truth) that generate knowledges about particular facets of social, political and economic life.

Chapter 2 will provide an overview of what I have described as the “deregulation narrative”. While using Michael Belzer’s *Sweatshops on Wheels* (2000) as an exemplar of this perspective, a wide range of trucking literature will be drawn on to provide evidence of its ubiquity. Of particular interest here is the state-centrism of the deregulation narrative, where trucking’s evolution is seen to be determined by the characteristics of successive regulatory regimes. This will be shown to have implications for the political strategies pursued by those seeking progressive change within the industry.

The third and final chapter will provide an alternative to the deregulation narrative presented in Chapter 2. Drawing on theoretical considerations presented in Chapter 1, I show how relationships between different technological and human actors produced the rationale for state regulation in the first place, and eventually deregulation as well. In regards to the latter phenomenon, I identify the emergence of a logistics imperative that can be said to have intensified work processes and deteriorated the quality of employment within the industry over the course of the last 30 years. Four information technologies will be focused on in particular. These are mobile communications systems, decision support systems, automatic vehicle/equipment identification systems, and electronic data interchange systems. Having provided overviews of each, their role in the formation of a veridical regime stemming from “expert knowledge” that dictates the idea of “best practices” within the industry is examined. The political implications of this account will be discussed in the Conclusion.

Chapter 1

This chapter aims to establish the theoretical premises to research presented in chapters 2 and 3. Drawing primarily from the work of Bruno Latour and Michel Foucault, my goal is to establish the political relevance to a materially sound account of social and economic change in the Canadian and American trucking industries. This emphasis on materiality will inform my own alternative to the state-centric de-regulation narrative identified in this thesis's introductory chapter, and explored in detail in Chapter 2.

Consistent with my own claim that effective prescriptions require accurate diagnoses, this task requires a discussion about how particular states of affairs come to be. In other words: a discussion about power. This discussion begins with an overview of Latour and some of the concepts associated with Actor Network Theory (ANT). Following John Law (1991a), my intention is to provide some epistemological considerations concerning how it is that “power effects” are generated through the temporary stabilization of specific relations between human and non-human actors. In regards to how these effects play out, I turn to Foucault's concept of power/knowledge and the significance of what he identifies as veridical regimes. This chapter will conclude by considering the idea of thick materialism, and how Latour and Foucault might be used together to understand how particular ways of doing things come to be associated with the idea of “the right way” of doing things. Throughout, I draw on Latour's argument that politics are more likely to succeed when they take into account the specific ties between human and non-human actors that make certain states of affairs possible.

Bruno Latour and Actor-Network Theory

In *Reassembling the Social: An Introduction to Actor-Network Theory* (2005), Bruno Latour issues a challenge to the social sciences regarding its use of the word “social”. He argues that the concept of “the social” has lost much of its explanatory value by virtue of being used to describe a “type of material”, similar to adjectives such as “wooden” or “steely” (2005: 1). This is problematic for Latour, because using the word “social” in this way assumes *a priori* the composite parts of what is being described. As a result, the idea of “the social” conjures up images of a static and generalized set of relationships applicable to virtually all facets of the collectivity commonly referred to as “society”.

In contrast, Latour argues that instead of using the concept of “the social” to explain particular phenomena, sociologists need to redirect their efforts toward the task of explaining exactly what it is that the so-called “social” is made up of. From this perspective, the idea of “social context” as an explanation for specific phenomena might very well be possible, but only if the composite parts of that context are explained in the process. To this end, Latour proposes that the definition of sociology be reconsidered as the “tracing of associations” as opposed to the “science of the social” (2005: 5). Noting that both “social” and “association” originate from the same Latin root, *socius*, he argues that with this definition, “the adjective social does not designate a thing among other things, like a black sheep among other white sheep, but *a type of connection* between things that are themselves not social” (2005: 5).

At times, *Reassembling the Social*’s cavalier tone suggests that Latour would have sociology do away with the concept of society (and hence “the social”) altogether.

However, as some moderating comments sprinkled throughout seem to suggest⁴, I suspect this tone is at least partly attributable to his playful style of argumentation as well as a desire to stir the figurative “contemporary debates in social theory pot”. In any event, I would like to distance myself from the idea that referring to *social* issues somehow constitutes an assault on the integrity of the discipline. Rather, I would like to reframe Latour’s critique as a problem of proportionality. If the composite parts of what we commonly call society and/or the social are never diagnosed, never described, and never discussed explicitly within political dialogue, then Latour may very well be correct in his most critical articulations of “the social’s” declining value as an explanatory term. Burawoy (2005) and Flyvbjerg (2001) have both argued for a distinction between what might be thought of – to borrow a set of terms from the hard sciences – basic and applied social studies. It is possible to imagine a balance between research conducted in both camps, where the tracing of associations conducted in the interest of basic social science informs references to society in the applied camp. This thesis positions itself decidedly on the basic side of this distinction. Its purpose is to contribute towards the description of a set of associations that might legitimately be referred to as social relations with regards to Canada and the United States’ trucking industries.

Non-human Actors and techno-human networks

The premise for Latour’s critique lays in what has been a trademark insistence of his throughout his academic career. Namely, that non-human actors be treated as equals to

---

⁴ For example, on page 11 of *Reassembling the Social’s* (2005) introductory chapter Latour states: “It’s true that in most situations resorting to the sociology of the social [which he contrasts to his preferred notion of the sociology of associations] is not only reasonable but also indispensable, since it offers a convenient shorthand to designate all the ingredients already *accepted* in the collective realm”.

their human counterparts in accounts/studies of technological and social phenomena. Michel Callon (1986) has made the same point through his concept of “symmetry” between the human and natural/technical world. Under the title of Actor Network Theory (ANT), this epistemological departure from the social sciences as they are commonly practiced has proven to be extremely useful in explaining interactions between humans and the natural/scientific/technological/architectural worlds, as well as between the hard and soft sciences (see Law 1991b; Law and Hassard 1999).

In a 1988 article entitled, “Mixing Humans and Non-Humans Together: The Sociology of a Door Closer”, Latour provides one of his most lucid accounts of ANT’s epistemological premises. In it, he playfully demonstrates the role that technological apparatuses as unassuming as doors, hinges and door closers play in facilitating the day to day operations of a fictional sociology department. Beginning from the premise that sociology has the tendency to discriminate against non-humans, he introduces the concept of “translation” to account for technologies’ performance of tasks that would otherwise have to be performed by humans. As a general rule, he states that “every time you want to know what a nonhuman does, simply imagine what other humans or other nonhumans would have to do were this character not present. This imaginary substitution exactly sizes up the role, or function of [non-human actors]” (1988: 299).

To demonstrate, Latour instructs the reader to engage in a small exercise. Supposing doors and hinges had never been invented, he paints a picture of the work humans would have to perform every time they wanted to enter or leave a building (assuming protection from the elements outside was a necessity, as it is for the fictional sociology department he is describing). Clearly, one would have to destroy and rebuild

the wall with each entry and exit. With this in mind, Latour instructs the reader to draw two columns. The first is to be populated with the number of tasks humans would have to perform if doors and hinges did not exist, and the other with the list of tasks performed when entering through a door. Clearly, the first list far outnumbers the single action listed in the second – simply pushing the door open.

This exercise leads Latour to the point that technologies perform functions that would otherwise require the work of many humans over an extended period of time. Through the translation of this workload to technological apparatuses, particular interactions between human actors are facilitated. In this respect, the technological apparatus is itself an actor that should explicitly be considered within the concept of social relations. Elsewhere, Latour expresses this symmetrical view of society as such:

[W]e are always faced by chains that look like this H-NH-H-NH-NH-NH-H-H-H-H-NH (where H stands for a human-like actant and NH for a non-human). Of course, an H-H-H assembly looks like social relations while a NH-NH-NH portion looks like a mechanism or a machine, but the point is that they are always integrated into longer chains (1991: 110).

From this perspective, technology can be seen to provide society with a degree of stability and/or durability that it would not otherwise have (see also Law 1991a). Not only do technologies perform tasks that would otherwise require the work of many human actors, but H-H-H assemblies depend to some degree on the existence of NH-NH-NH assemblies upstream from them. The task of sociology as Latour sees it is to trace these chains, or in slightly different terms, these techno-human networks, to establish a better understanding of the stuff that gives the appearance of a coherent and stable society.

Power Effects

The idea of society as a product of temporarily stabilized techno-human networks informs some useful considerations by John Law on the subject of power. Law (1991a) begins by noting four themes that dominate discussions of power in the social sciences: “power to”, “power over”, “power storage”, and “power discretion”. The first two are certainly the most familiar. “Power to” refers to the productive and enabling character that power may take. As is to be shown below, this theme is readily identifiable with Foucault and the idea that power is exercised through the encouragement of particular behaviours vis-à-vis power/knowledge. Of course, “power over” represents the more traditional understanding of power in the social sciences, where individuals and/or institutions (i.e. the state, corporations) exercise their own will over others. Chapter 2 will argue that this view of power characterizes what I have identified as the deregulation narrative. To these two basic forms, Law adds the idea of “power storage” and “power discretion”. The former addresses the idea that individuals or entities might actually possess power, or be imbued with it by virtue of their formal position or “social status”. The latter refers to the related idea that those in possession of power might choose to withhold it.

Law’s position is that all four of these general themes within the social sciences’ treatment of power are viable, but that generally excluded from the discussion is what he identifies as “power effects”. In his own words:

I want to talk about power to and power over, of the way in which these are stored up and deployed. But at the same time I do not want to lose

sight of the way in which these are also a set of precarious relational and transformational effects. Accordingly, for me the crucial research question has to do with *how it is that relations are stabilized for long enough to generate the effects and so the conditions of power* [sic] (Law 1991a: 172).

For Law, these relations are stabilized by virtue of depending on material, non-human actors. In this respect, the seemingly pure social relations (H-H-H) that constitute power to, power over, power storage and power discretion are made possible only by virtue of their interaction with the material, and for the present purposes technological components of longer actor-networks. After all, how better to conceive of stability in social relations than to look to more durable material elements to which potential human action has been translated? However, an important element of this view to power is that techno-human networks are never static for long, if at all. Rather, as is to be shown through the regulation of the trucking industry in Chapter 3, the formation of H-H-H relations typical of power to, power over, power storage and power discretion have the tendency to outlast the specific network configurations that generated them in the first place.

Transportation Technologies as Actors

These considerations about power and society provide an equally useful way to begin thinking about the role of non-human actors in the trucking industry. Take for example the list-making exercise that Latour applies to the activity of shutting a door. Should the same exercise be undertaken with regards to the number of human tasks, or the amount of human labour, required in moving 10 refrigerators over hundreds of kilometers by hand as opposed to by truck, it is clear that trucks save considerable amounts of human labour.

This is obvious. However, another point touched on by Latour (1988) is that the list of actors implicated in the performance of this task has the tendency to grow with the use of technological apparatuses. To illustrate this point, consider the number of actors required for the transportation of 10 refrigerators by human labour, as opposed to an earlier transportation technology like a horse drawn wagon. In the first scenario, it is possible for the refrigerators to be moved by one person making 10 trips, or 10 persons making only one trip each. In both cases, the list of actors, while perhaps numbering 10, still only consists of one type of actor: a human being. In contrast, consider the actors implicated when this labour is translated to a horse drawn wagon. The list of relevant actors in this example might look like this:

• Horses	• Wagon Chassis	• Bits
• Grain	• Axles	• Harnesses
• Water	• Wheels	• Reins
• Human	• Wagon Bed	

Not only are the horses themselves drawn into the mix, but also the wagon and tack gear's composite parts. Furthermore, whereas transporting the refrigerator with 10 human labourers might have been required to perform the task in only one trip, the use of a horse drawn wagon accomplishes the task in one trip, while requiring the labour of only one human to drive the horse team (assuming the wagon has room for 10 refrigerators). The translation of these tasks to truck and trailer technology further populates the list of actors working in unison to transport the refrigerators. In this case, the list of relevant actors might look like this:

• Truck Chassis	• Human Driver	• Axles
• Trailer Chassis	• Diesel Fuel	• Pneumatic Tires
• Truck Cab	• Transmission Fluid	• Wheels
• Trailer	• Engine Oil	• Drive shaft

- Engine
- Transmission
- Clutch
- Alternator and Starter
- Battery
- Radiator and Cooling System
- Suspension System
- Steering Assembly
- Exhaust System
- Braking System
- Fuel Injection System
- Electrical Systems

This rather short list of actors is required to work in unison with countless other components, to say nothing of the smaller components that make up each of the actors listed above. Clearly, if we are to follow Latour and Callon's idea of a symmetrical society, these mechanical elements become as integral to distribution networks as truck drivers, trucking firms and state regulation. If this is the case, it is clear that in the process of translating the work of one human to a technological apparatus, the number of actors required to perform a particular task is almost always increased as well.

Political Relevance of ANT

Latour's insistence that the social sciences concern itself with the tracing of associations between human and non-human actors has an explicitly political motivation. In his own words:

It does not require enormous skill or political acumen to realize that if you have to fight against a force that is invisible, untraceable, ubiquitous, and total, you will be powerless and roundly defeated. It's only if forces are made of smaller ties, whose resistance can be tested one by one, that you might have a chance to modify a given state of affairs (Latour 2005: 250).

Consistent with my own claim that effective prescriptions require accurate diagnoses, Latour's political strategy is to increase the number of actors considered in understandings of how particular states of affairs have come to be. In doing so,

associations between human and non-human actors, as well as the stabilizing effects that they have are brought explicitly into political discussion. His thoughts on the social sciences as they are commonly practiced are worth quoting at length:

Critical sociologists have underestimated the difficulty of doing politics by insisting that the social consists of just a few types of participants. It did not care to notice that there was not much chance for politics to succeed if the list of *bona fide* members making up the social world was drastically restricted in advance (2005: 250).

He continues a few pages later:

To insist that behind all the various issues there exists the overarching presence of the same system, the same empire, the same totality, has always struck me as an extreme case of masochism, a perverted way to look for sure defeat while enjoying the bittersweet feeling of superior political correctness (2005: 252).

As chapter 2 will demonstrate, critical literature on North American trucking is subject to Latour's critique by virtue of privileging the state as an actor, and deregulation as the more general social context responsible for changes in the industry. Based on Latour's comments cited above, social contexts – i.e. capitalism, neoliberalism, globalization, post-industrialism – deployed as explanations for particular phenomena should actually be treated as the things that need explaining themselves. For Latour, it is only through explicit discussion of the networks of actors constituting the appearance of these high-level concepts that one is able to talk constructively about *how* economic exploitation, privatization, global inequality and de-skilling actually occur. Methodologically, this leads Latour to emphasize *descriptive* accounts of the connections between actors implicated in the stabilization of particular states of affairs. As he sees it, to be true to the idea of sociology as the science of associations, the sociological researcher must leave

prescriptive and even explanatory tasks to others. His hope is that the work of sociologists will provide the content for those considerations.

Michel Foucault and Government Beyond the State

Latour's political project – that of diagnosing the precise stuff that gives society its apparent stability – is reminiscent of the political relevance attributed to the work of Michel Foucault. This is particularly true in regards to each theorist's desire to draw attention away from critical social science's list of usual political suspects; namely abstractions such as the state, labour, and civil society. Consider Foucault's comments concerning what he perceives to be a case of "state-phobia" in the social sciences:

... the State does not have an essence. The State is not a universal nor in itself an autonomous source of power...The State is nothing else but the effect, the profile, the mobile shape of a [regime of governmentalities] (2008: 77).

Similar to Latour, Foucault argues here that the collective entity that is the state is given its appearance and presumably its stability through associations between its composite parts. In this case: multiple governmentalities. This of course is not to say that Foucault has no interest in the state. Rather, his interest in the now famous cases of madness, the penal system, sexuality, and liberalism was in how practices and knowledges concerning each areas target populations were subsequently taken up by the state itself. In other words, government should be viewed less as an institution, and more as a series of disconnected practices undertaken by a heterogeneous range of individuals in their professional capacities as "experts". In the words of Miller and Rose:

[T]he political vocabulary structured by oppositions between state and civil society...does not adequately characterize the diverse ways in which rule is exercised in advanced liberal democracies. Political power is exercised today through a profusion of shifting alliances between diverse authorities in projects to govern a multitude of facets of economic activity, social life and individual conduct (1992: 1).

These comments reflect the basis for Foucault's concept of governmentality and the related idea of an "analytics of government" (see Foucault: 2007, 2008). The notion of expertise is closely related to the idea of "techniques of the self", which are generated through knowledges that articulate "all those dreams, schemes, strategies and maneuvers...that seek to shape the beliefs and conduct of others in desired directions by acting upon their will, their circumstances or their environment (Miller and Rose 1992: 2; see also Foucault 2007; Rose 1999; Dean 1999). Thus, in addition to the governmental function played by various forms of expertise, governmentality also draws attention to the ways in which individuals act upon their own senses of self in what might be most accurately described as self-regulation. As captured by Law's aforementioned reference to the idea of "power to", this view of government is significant for drawing attention to how power – and indeed the act of governing itself – takes not only a negative/repressive form (i.e. power over), but a positive one as well. This is so in the sense that individual freedom is itself a necessary precondition for effective self-regulation in liberal democratic societies.

Power/Knowledge

The premise for these observations about the nature of government in modern liberal democracies is closely related to Foucault's aligning of the concepts of knowledge and

power (i.e. knowledge/power). This has drawn attention to how supposed truths about particular areas of social, political and economic life are produced and reproduced through discursive and technical practices. In his 1978-79 lectures at the College de France, he refers to specific configurations of discursive and technical practices as “regimes of veridiction” (Foucault 2008: 35). According to Foucault, “[i]t is not so much the history of the true or the history of the false as the history of veridiction which has a political significance” (36-37). What he means by this is that to study power/knowledge, one does not analyze particular discourses or ways of doing things by comparing them to an idealized truth about the human condition, or to show how they have obscured or falsified a reality that is somehow “more true”. Ever the non-essentialist, Foucault is arguing that all perceptions of reality depend to some degree on a complex apparatus of knowledge/power to bring those very perceptions into being at a conceptual level. In this respect Foucault, like Latour, is relentlessly material in his analysis (Rabinow 1984). Methodologically, this leads Foucault to emphasize accounts of how particular configurations of discursive and technical practices shape the conduct of human conduct. This is done primarily through the historicization of specific practices for the purpose of destabilizing the matter-of-factness attributed to them, thereby rendering them seemingly ephemeral. In his own words:

The point of all these investigations concerning madness, disease, delinquency, sexuality and [liberalism], is to show how the coupling of a set of practices and a regime of truth form an apparatus of knowledge-power that effectively marks out in reality that which does not exist and legitimately submits it to the division between true and false” (Foucault 2008: 19).

From this perspective, nothing about society is exactly as it is needs to be, nor is there any *a priori* reason for it having to change. In this respect, Foucault's political project is by no means prescriptive. Rather, his desire is to provide the analytical tools for individuals to identify how it is that they have come to feel marginalized or repressed through particular apparatuses of power/knowledge. From this point of destabilization, alternatives to what – if I may be forgiven for using such a loaded term – may be described as hegemonic veridical regimes are given a sense of possibility that they would not otherwise have.

Latour and Foucault

In a 1993 interview, Latour responds to a question concerning his relationship to the work of Foucault by saying: “I have used Foucault and read him a lot, so he might be absorbed in my thinking probably much more than I recognize, but I still think he is a much more traditional thinker than he at first appears” (249). As one may expect from the preceding, Foucault's so-called traditionalism stems from Latour's criticism of his failure to treat human and non-human actors symmetrically. Nevertheless, I follow others such as John Law (1999) and Andrew Barry (2001) in their recognition of a compatibility between the two thinkers. Consistent with Foucault's expressed desire for his work to be treated as a “toolbox” as opposed to an attempt at articulating a grand theory applicable to all domains of reality (see Foucault 1994), I accept Latour's critique as it relates to Foucault's treatment of nonhuman actors. However, this requires some qualification. After all, it is Foucault who perhaps more significantly than Latour has

drawn attention to the consideration of architecture in the social sciences vis-à-vis his discussions of Bentham's panopticon (see Foucault 1977). Similarly, his consideration of dividing practices through the examples of the leper colony and the plague town demonstrate the role of not just architecture, but also technology in the demarcation of desirable and undesirable bodies (see Foucault 1977). Further to this, Foucault's emphasis on practice is as Paul Veyne has pointed out, not a matter of attributing power to some "mysterious agency", or "hidden engine" driving history forward. Rather it is "the stuff that people do, in the concrete" (1997: 153). Again, Foucault's emphasis on material non-prescriptive accounts suggest Latour would be slightly more complimentary in his assessment of Foucault's impact on the social sciences. However, it is on this very point of materialism that I think Latour and Foucault differ most significantly.

Thick vs. Thin Materialism

In a 2007 introduction to an issue of the journal *Isis*, Latour notes a distinction between thick and thin materialism. This distinction rests upon the treatment of technological artifacts as things as opposed to objects. In what Latour identifies as "thin materialism", technologies such as on-board computers and logistics software are treated as the outcomes of geometric blueprints and various algorithms – as simply objects that are themselves docile products of human invention. I argue that despite the aforementioned examples, Foucault's materialism is a thin one that sees architecture or technology as the product of human aspirations to surveillance and/or division (i.e. dividing practices). Nigel Thrift has made a similar point in his observation that Foucault's work is "devoid

of thingness” (2007: 56). In contrast, a “thick account” does not treat technologies as mere objects, but as things that have their own interests and goals towards which they are constantly working.

Perhaps the archetypal example of thick materialism is Latour’s own study of the failed French high speed rail project, Aramus. In his book, *Aramus, Or, For The Love of Technology* (1996), he playfully attributes various technological components of the failed project thoughts and motivations. Consider the following excerpt:

“For my part,” the motor declares, “I won’t put up with nonmaterial coupling. Never, do you hear me? Never will I allow acceleration and deceleration to be regulated down to the millisecond!”

“Well, as for me,” says the chip, “I bug the CEO and his journalists. As soon as they want to break me in, I break down and keep them from getting started. Ah! it’s a beautiful sight watching their faces fall, and poor Lamoureux in a rage...”

“That’s pretty good,” says the chassis. “Me on the contrary, I let them move me around with one finger. I glide right over the tracks, since I’m so light, and I actually let myself be bumped a bit.”

“Oh, stop pretending you’re an automobile!”

“Hah! A chassis like that, you really have to wonder what she’s doing in guided transportation...”

“Leave her alone, she’s a bootlicker!”

“She’s right,” says the optical sensor, “I help the car too, and it’s even thanks to me that the motor can be put to work.”

“Thanks to me – listen to him! As soon as the laser angle is too obtuse, he loses his bearings! And he talks about putting me to work!”

“You’re the one who’s obtuse – you can’t do anything but break down. At least I authorize linkups,” says the central control panel, “and furthermore I’m Compatible.”

“‘I’m Compatible’! Well I guess I’d rather hear than be deaf,” says the base computer. “But all the software had to be rewritten just for him.” (59).

While unquestionably amusing, I do not think that such a playful approach is without value. Similar to the list making exercise outlined above (where the amount of human work required to displace particular technologies is unlikely to ever be practically undertaken), this anthropomorphized view of technological components provides the

researcher with a richer account (i.e. a symmetrical view) of the actors implicit in the production of a specific social phenomenon; in this case the failure of Aramus. The above conversation highlights how the potential and actual functions of the identified components are never completely controlled by the scientists, engineers, politicians and even journalists that aspire to wield them. In this respect, it serves as a useful reminder of the point that by no means does an emphasis on non-human actors' role in bringing about particular outcomes amount to an appeal to technological determinism. Rather, non-human actors can be intransigent to the expectations of the humans that try to wield them, and humans themselves can resist behaviours that non-humans prescribe. Indeed, Aramus's eventual failure is a testament to the fact that despite the system's theoretical possibility, its eventual fate was determined by how both political *and* technological actors performed in relation to each other.

Some Ontological Considerations: Prescription, Subscription and the Making of Subjects

I side with Latour in his preference for thick accounts. This does not require writing out figurative dialogues for non-human actors. However, it does require treating technologies as having actual capacities and yet-to-be-realized potentialities that make them active participants in the formation of social relations. As with humans, the ability to be or to do something does not guarantee the realization of this potential. However, it does elicit particular responses from other actors. In this respect, technology can also be said to prescribe particular behaviours to their human counterparts in their interactions with them. For example, in the aforementioned door closer article, Latour notes that

doors equipped with powerful spring mechanisms make for impolite grooms. Regardless of how many people wish to pass successively through the door, its tendency is always to slam shut in the face of the next person. This being the case, people using the door have to be quick in passing through, and must also not follow too closely on the heels of the person in front of them. Thus, because the non-human door closer is less skilled than a human groom, it requires skilled users. In other words, the door closer expects and cultivates particular behaviours from those passing through its frame. Latour refers to the expectation of these behaviours as “prescription”. In slightly different terms, Steve Woolgar (1991) has shown through the analogy of “the machine as text” how computers “configure their users”. Again, in no case is this configuration inevitable. Regardless of the behaviour prescribed by any non-human actor, there always exists the possibility that the human actor will not subscribe to it. Thus, prescription and subscription must always be considered together.

These considerations are important insofar as they outline ontological principles underscoring Latour’s work. In other words, human interactions with non-humans influence their orientations/perceptions of the world around them. Of course, these considerations vis-à-vis the ideas of prescription and subscription draw parallels to what Foucault identifies as the major goal of his life’s work; namely the study of how it is that human beings are made into subjects (Foucault 2000). Articulated most interestingly through the aforementioned concept of self-regulation (i.e. governmentality), this view of government and the associated concepts of knowledge/power and discursively and technically constituted veridical regimes provide an additional framework for understanding how prescribed behaviours are subsequently internalized by individuals.

This view to power has significantly influenced how both government and the idea of social control are viewed in the social sciences. By his own admission, Latour's own social theory is indebted to these contributions. However, despite the legitimacy of his preference for thick material accounts, Latour has little to say about how or why subscription is seemingly ubiquitous in relation to some prescriptions, but only piecemeal in relation to others. His concept of "trials of strength" emphasizes the degree to which non-human actors must endure gradients of resistance in their efforts to establish themselves within actor-networks, however it falls short of providing reasons beyond their own composition when successful at doing so (see Latour 1987). In this respect, I think that a pairing with Foucault's emphasis on the role of knowledge/power and expertise in establishing particular "common sense" ways of doing things provides a more dynamic ontological account. In this respect, widespread subscription to technologically prescribed behaviours can be said to depend to some degree on their place within technically and discursively constituted veridical regimes. This in turn scripts potential actions undertaken by human actors in a manner consistent with the idea of self-regulation. This view is consistent with Law's reflections on the idea of power effects, where techno-human networks are seen to generate and stabilize human relationships characteristic of "power to", "power over", "power discretion", and "power storage". This is relevant to trucking insofar as it provides a theoretical framework for understanding the relationship between human actors and technology, and how this relationship produces truths about how things are done within the industry.

How Trucks and Accounting Expertise Displaced the Horse

As a final word on these theoretical considerations, it may serve useful to provide an example demonstrating this relationship between symmetrical accounts of actors and the idea of veridical regimes produced through expert knowledge. Consider Karolevitz's (1966) documentation of U.S. trucking's seminal years, where he emphasizes the point that trucks – and automobiles in general for that matter – were not immediately seen as preferable modes of transportation. Rather, their perceived superiority to the horse drawn wagon depended on elaborate justification. Early engine, tire, suspension and highway technology was such that this seemed an unlikely feat. Certainly, intercity and long-haul freight transportation was out of the question at the time, as mechanical malfunctions, broken wheels and axles, and the possibility of getting stuck on unpaved dirt roads posed far greater risks of delay or being stranded. Rather, trucking's early years were characterized by decidedly local routes, which raised protest over their tendency to scare horses and emit black smoke and smelly fumes within increasingly dense urban environments. In other words, despite the ability for these mechanical components to successfully transport freight, this was not in and of itself enough to guarantee their widespread up-take. However, Karolevitz inadvertently references an example of a persuasive economic rationalization based on bookkeeping techniques and mathematical calculations when he states that:

In the end, the argument which was [the horse's] final undoing was an economic one....[Bookkeepers] drew up tables and graphs and assorted charts to spell out just how expensive horse transportation really was....Each new computation made the horse look worse – and this was the kind of message any businessman (no matter how sentimental) could understand (1966: 27-29).

Karolevitz continues, noting that:

In the past [a businessman] hadn't thought much about the fact that he had to feed his horses everyday whether they worked or not. He little considered the expense of replacement teams, sick horses, or fence mending. He took for granted the huge barns, the blacksmithing bills and interminable pitching of hay (1966: 29-30).

These comments are interesting insofar as they show how the transition from horse drawn wagon to motorized truck depended on a number of discursive and calculative techniques associated with the expertise of bookkeeping. In this respect, the “inefficiency” of a number of taken for granted business expenses was made conceptually intelligible by virtue of the motorized truck’s relationship to the horse-drawn wagon, and the associated ability for expert knowledge to generate technical comparisons between the two. The production of a “message” that “any businessman could understand” epitomizes the idea of how this knowledge subsequently informs “common-sense” decisions consistent with the idea of self-regulation. This provides an excellent example of how associations between human and non-human actors produce technically and discursively defined regimes of veridiction concerning particular facets of reality.

Summary

This chapter has outlined the relationship between human actors, non-human actors, and the idea of veridical regimes stemming from interactions between them. In the context of a thick materialism, it has argued that by including non-human actors into accounts of particular states of affairs, more accurate diagnoses of how things have come to be are possible. This being the case, political responses stemming from these symmetrical

diagnoses might be more accurate in their identification of political targets. These considerations will inform approaches to material covered in Chapters 2 and 3.

Chapter 2

The goal of this chapter is twofold. The first is to provide evidence of a “deregulation narrative” characteristic of critical explanations for change in Canada and the United States’ trucking industries. The second is to provide evidence of a monolithic political approach stemming from this narrative. In both cases, the state-centrism of literature reviewed will be emphasized. In chapter 3, this focus will be juxtaposed to a “logistics imperative” stemming from the identification of particular techno-human networks. Drawing on the theoretical premises to my own research presented in chapter 1, literature reviewed here is to be understood as non-human actors contributing towards the stabilization of a veridical regime informing both governance and resistance within the trucking industry.

Unfortunately, critical academic literature on the trucking industry is in short supply (McMullen 2005). This is especially true for literature targeting trucking in Canada. As such, identifying leaders in the field is a relatively easy task. In this respect, Michael Belzer’s near 20 years of research on trucking and transportation issues will serve to exemplify the deregulation narrative. This chapter will begin by making a case for this focus. It will then identify the actors emphasized by Belzer in his explanation for the deterioration of quality employment in the trucking industry, before moving on to detail specific policy elements pertinent to the deregulation narrative. This chapter will conclude by critiquing Belzer’s understanding of regulation, opting instead for a broader definition that draws on the ideas of prescription/subscription and subjectivity outlined in Chapter 1. While Belzer will serve to exemplify the deregulation narrative throughout

this chapter, the work of other academics writing on the trucking industry will be drawn on to better demonstrate the degree to which it dominates criticisms of transformation in the industry.

Michael Belzer and Sweatshops on Wheels

With nearly 10 years of experience as an over the road truck driver (Belzer 2000), Belzer's academic career has revolved around an industry that he knows from the inside out. His M.S. thesis and Ph.D. dissertation – both received from Cornell University's New York State School of Industrial and Labour Relations in 1990 and 1993 respectively – dealt with the relationship between economic deregulation and labour relations in the trucking industry⁵. He has continued to publish and speak on this topic throughout his career, while also branching out to other transportation issues such as occupational health and safety in truck, bus and rail transport, the economic impact of freight transportation (particularly cross-border trade) and the planning of transportation infrastructure. He has held the title of Associate Professor since 2000 at Wayne State University's Department of Economics where he received tenure in 2004⁶.

My own introduction to Belzer's work was through his relationship to the Alfred P. Sloan Foundation's Trucking Industry Program⁷. The Program is one of 24 Industry Research Centres funded by the Sloan Foundation. Previously headquartered at the

---

⁵ These were respectively titled "The Transformation of Labour Relations in the Trucking Industry Since Deregulation", and "Collective Bargaining in the Trucking Industry: The Effects of Institutional and Economic Restructuring".

⁶ This and other information regarding Belzer's career and publishing history are taken from his professional c.v., posted through Wayne State University's faculty information page. Available at: <http://www.clas.wayne.edu/faculty/belzer>

⁷ Information on the Alfred P. Sloan Foundation is available at <http://www.sloan.org/>. Information about the Trucking Industry Program in particular can be found at: <http://www.industrystudies.org/mc/page.do?sitePageId=84524&orgId=isa1>

University of Michigan, it is currently run through the Georgia Institute of Technology. As Co-Founder and Associate Director of The Program, Belzer's research, along with that of roughly 12 other academic researchers, has benefited from considerable financial stability. This stability has allowed The Program to conduct some of the most comprehensive research on trucking in North America⁸. For Belzer himself, *Sweatshops on Wheels: Winners and Losers in Trucking Deregulation* (2000) is his most detailed and lengthy engagement with change in the industry. The culmination of nearly a decade's worth of researching and writing on the topic, the book argues that increased competition between firms has eroded prospects for quality employment within the industry. In his own words, Belzer is taking issue with how competitive advantages have been wrought by "working harder, not smarter" (Belzer: 2000: 8). On these points, Belzer and I are in complete agreement. However, as is to be shown in detail below, Belzer insists that these issues stem from a single source; namely, state deregulation of the industry in the 1980s. It is this exclusive focus on state policy that I take issue with.

While the date of *Sweatshops on Wheels*' publication begs the question of just how relevant its emphasis on deregulation continues to be over 10 years down the line, a brief glimpse at not only Belzer's recent work, but also the work of others writing on the trucking industry suggest that its central themes remain topical. Although Belzer's last public lecture delivered under the book's title was in 2006, he continues to speak about the trucking industry under titles linking deregulation and/or excessive competition to the deterioration of quality employment. For example, Belzer presented a paper at a

---

⁸ For example, Belzer oversees the continued activities of the Trucking Industry Benchmarking Program; an interactive online database of "best practices" relating to different components of the industry. Co-founder Dale Belman boasts a similarly impressive record of publication on trucking and transportation issues, including oversight of a comprehensive driver survey conducted in the American Midwest in 1997-98 (see Belman, Monaco and Brooks 2004).

Memorial University conference in 2006 under the title, “Deregulation, Contingent Pay, and Subcontracting: Safety and Health in the U.S. Trucking Industry”. In 2007, he delivered a guest lecture at the U.S. Labor and Employment Relations Association’s National Policy Forum entitled, “The Trucking Industry: Can we Create a High Road in the Face of Destructive Competition?”. In 2009, he completed a study jointly commissioned by the Brookings Institution, George Washington University, and the Urban Institute bearing the title, “Paying the Costs, Reaping the Benefits: What Unfettered Competition in the U.S. Trucking Industry Means for Regions, Taxpayers and the Workforce”. Elsewhere, Starr McMullen’s brief history of U.S. trucking notes that technological innovation, the emergence of new consumer markets, and global economic development all played a role in the industry’s historical trajectory. However, she is adamant that “of all these influences, government intervention, especially economic regulation, played a pivotal role” (2005: 1). While also identifying the state as a “pivotal actor”, Daniel Mader’s *Heavy Traffic: Deregulation, Trade and Transformation in North American Trucking* claims that “regulated trucking was an exemplar of an industry molded and organized by the state” (2000: 5). In the realm of public policy, a 2009 report prepared by David Bensman of Rutgers University for the non-profit research organization Demos, sports the emotive title, *Port Trucking Down the Low Road: A Sad Story of Deregulation*.

As further evidence of this emphasis on public policy, historical accounts of trucking inevitably divide the industry’s development into three distinct time periods; conceptually distinguishable by virtue of that era’s regulatory regime. Belzer identifies these as the pre-regulatory era, which encompasses the years prior to 1935; the regulatory

era spanning from 1935 to 1980; and the deregulated era that has existed since 1980 (see also McMullen 2005; Peoples 2005).

Needless to say, these examples suggest that the themes covered by Belzer in *Sweatshops on Wheels* continue to inform critical understandings of how current states of affairs in trucking have come to be, as well as political responses to resisting them. In what follows, this deregulation narrative will be explored through the argument made in *Sweatshops on Wheels*, with support from others who have deployed similar lines of logic.

Identifying Actors: A Case of the Usual Suspects

In the preface to *Sweatshops on Wheels*, Belzer makes his case for the sweatshop analogy. Drawing comparisons between present day working conditions in the trucking industry and 19th century sweatshops, he emphasizes similarities along the lines of working long, unpredictable and sometimes unpaid hours, low wages, and unsafe working conditions. Having established the reasoning behind this comparison, he turns to the question of who is to be held responsible:

Who – or what is the culprit? The simplistic answer blames employers for this state of affairs. After all, it is easy to see who apparently holds the power in this personal dynamic. A closer look, however, suggests that the individual competitiveness embedded in our economic institutions has a dark side: competition breeds winners and losers, and the market, by itself does not care how they are distributed. It does not matter if competition makes a few winners extremely wealthy while a large number of losers become relatively poor, as long as average wealth increases....The problem therefore is more complex than a simple struggle between management and labour. The problem lies with public policy that supports unbridled competition in every sphere as a blanket solution to our social and economic problems (xiii-ix).

From this exert, one is able to identify three actors that Belzer considers to be worthy of consideration in determining who is to blame for working conditions in the trucking industry. These are employers, states vis-à-vis the idea of public policy, and markets. To be fair, Belzer makes consistent reference to employees/unions throughout *Sweatshops on Wheels*, as well as consumers. However, the fact that they are not included in this passage is telling, as both are treated as passive entities subject to the whims of firms – or at least those firms that emerge as “winners” within the marketplace – and of course state policy. Furthermore, there seems to be a tacit acknowledgment of a hierarchy of power at work here. This view is supported again a few pages later when Belzer states that: “...economic deregulation has produced the kind of business competition that forces many trucking employers in some sectors to [make workers drive faster and work longer hours]” (2000: 8). Here, the view is clearly expressed that without intervention by the state, firms run the risk of being “forced” by the seemingly unwieldy character of an “uncaring” market. However, it should be clear that while I have identified the market as an actor in the preceding passage, Belzer’s treatment is less anthropomorphizing. Rather, I would argue that he treats the market as a destructive force of nature that the state alone has the potential to bring under control. This being the case, it is clear that Belzer treats power as something exercised in a negative form – as “power over”. This is clear in his statement that trucking firms apparently “hold” power, and in his lamenting of the state’s refusal to use the power that it holds to repress the destructive nature of the marketplace (i.e. “power storage”). He elaborates on this treatment of the state elsewhere, pinpointing exactly where he feels it has gone wrong:

Whether to improve social or environmental conditions, ensure that those who create negative competitive externalities pay for them, assure fair

business practices, or control prices...government regulation was one of the hallmarks of the first three quarters of the twentieth century in the United States....Public policy has undergone a veritable revolution during the last generation, however. Since the 1970s, and with particular earnest since 1980, government policy has been to dismantle regulation in favor of market competition, wherever possible....This book about the trucking industry illustrates how deregulation – intense market competition – has affected one important segment of American industry (3-5).

With this, the reader is given a clearer idea of the injustices Belzer is charging the state with. Save for one reference to the relationship between free trade policies and “neoliberal institutions” in the book’s final chapter, he avoids labeling this “veritable revolution” as such. However, it is clear that he is talking about what many critical scholars have identified as neoliberalism (see Steger and Roy 2010; Harvey 2005; Chomsky 1999). It is no coincidence that the aforementioned “eras” invariably used to describe trucking’s historical trajectory parallel those commonly associated with liberal, Keynesian, and neoliberal eras in global political economy. The familiarity of these successive ideological regimes is such that they require little elaboration. However, despite the frequency that neoliberal state policy is negatively identified in connection to issues as far ranging as the unavailability of early childhood education and care (see McKeen 2007), social housing (Hackworth 2008), and quality employment opportunities (Herod 2006), it is arguable that resistance to it has been largely unsuccessful (Harvey 2005), or perhaps its impact less all-encompassing than often argued (Ong 2006). With this in mind, consider Latour’s comment on politics cited in Chapter 1:

To insist that behind all the various issues there exists the overarching presence of the same system, the same empire, the same totality, has always struck me as an extreme case of masochism, a perverted way to look for sure defeat while enjoying the bittersweet feeling of superior political correctness (2005: 252).

I argue that Belzer's identification of powerful states acting under the ideological sway of neoliberalism is subject to this critique. If Latour's insistence that such scripted explanations for perceived injustices in the world are doomed to "sure defeat", then the exercise of populating such accounts with different actors while thinking more broadly about how power operates seems like a worthwhile political exercise. However, to better illustrate how this critique applies to trucking specifically, it is useful to explore in moderate detail some of the specific elements to what I have identified as the deregulation narrative.

The "Regulatory Era"

Belzer (2000) describes trucking's seminal years as being characterized by low rates of return and high levels of firm bankruptcy. Potential entry to the industry was practically universal, with the only capital requirement being the purchase or leasing of a truck. This meant that competition between firms – which themselves often consisted of simply one truck and one driver – was cutthroat. This had the effect of keeping labour costs low and revenues modest. In concert with advancements in engine, tire, trailer and highway technology that made intercity and longhaul freight transportation possible, these characteristics increasingly placed trucks in direct competition with railroads on the basis of both cost and in terms of flexibility related to geography and freight volume (see Chapter 3). After all, shipping goods by truck did not require filling an entire railcar, or the additional logistics associated with transferring freight to and from wagons or trucks at sometimes inconveniently located rail yards. In both Canada and the United States, this had the effect of raising concerns amongst the railways over trucking's encroachment

on markets that they formerly dominated. Unable to compete on the basis of cost, they looked to the state for protection. Thus, in both countries rationalization for regulating the industry stemmed from a concern over its perceived volatility as well as an interest in protecting railways on the grounds that they served a national interest (Mader 2000). Compounding these factors was the onset of the Great Depression and the desire to protect jobs in a derived demand industry particularly sensitive to reduced and/or volatile levels of aggregate demand.

In Canada, trucking's regulatory era began in the late 1920's largely in response to concerted efforts by the two national railways to secure state protection from over the road competition. This consisted of each province erecting its own set of regulations, thereby requiring would-be interprovincial carriers to apply for licensing in each province that they intended to haul in. When federal oversight of trucking was established with the passing of the Motor Vehicle Transport Act in 1954, Ottawa chose to maintain this decentralized system (Mader 2000).

While individual states did implement regulation as early as the 1920s in the United States, a centralized regulatory regime was brought into effect with the passing of the Motor Carrier act of 1935. This delegated responsibility for the regulation of both inter- and intrastate transportation to the Interstate Commerce Commission (ICC), which had previously been formed to oversee regulation of the railroad industry in 1887 (McMullen 2005). Thus, whereas Canadian trucking firms had to apply for operating licenses in each province that they operated in, American firms only had to apply to the federal government via the ICC for operating licenses. Nevertheless, the difference between Canada and the United States' regulatory systems was negligible enough for

Mader to describe the two countries as having “nearly symmetrical regimes of motor carrier regulation for almost fifty years” (2000: 5). Both regimes consisted of entry restrictions, control over the routing of goods, and rate regulations.

Entry Restrictions

In terms of entry restrictions, these consisted of new firms needing to obtain a “public convenience and necessity” certificate from the ICC or equivalent provincial body⁹. This required that the applicant firm’s attorneys convince state administrators that the geographic areas and specific commodities that said firm planned to haul were not already sufficiently serviced by existing rail and trucking routes. This required providing evidence that their proposed activities would not harm other firms with existing authority in the specific markets applied for (Belzer 2000; McMullen 2005).

Operating Routes

The granting of an operating certificate was accompanied by detailed information regarding geographic markets, commodities and individual routes that that firm was allowed to service (Belzer 2000; Peoples 2005). According to Mader:

These provisions meant that operating authorities were written in very particular terms, listing exactly which sections of which highways and access roads a carrier could use and exactly which items out of dozens a carrier could transport on which section and in which direction (2000: 22).

In this manner, firms were protected from competition along routes that they held operating authority over for particular commodities. This is not to say that multiple

---

⁹ The one provincial exception is Alberta, which has never regulated intraprovincial transport beyond requiring proof of insurance and financial responsibility. However, interprovincial carriers looking to pass into Alberta would have had to apply for licensing (Mader 2000).

companies did not share roadways. However, the transportation of specific commodities did have the appearance of belonging to particular firms in particular regions.

Rate Regulation

In the U.S., rate regulation took the form of requiring certified firms to file freight rates with the ICC to prevent instances of price cutting in the industry. Filed rates were determined collectively through rate bureaus made up of representatives from certified firms. Rate bureaus would meet to vote on standardized shipping rates for hundreds of individual commodities and routes (McMullen 2005; Belzer 2000; Mader 2000). Rates submitted to the ICC were subject to denial or modification if deemed unreasonable. Established rates were then published for the convenience of shippers.

In Canada, provincial regulatory boards concerned themselves almost exclusively with intraprovincial rates. As a result, different rate filing procedures typified each province, with Alberta opting out of the practice altogether (Mader 2000). For example, Manitoba, Saskatchewan and Newfoundland operated in a similar fashion to the United States, where submitted rates were assessed by the board, published for the benefit of shippers, and enforced. Elsewhere (with the exception of Alberta), rates were filed, but the provincial bodies rarely stepped in to monitor, much less enforce adherence to them. Rather, respect for collectively determined shipping rates was informally regulated by trucking firms themselves (Mader 2000). Thus, while instances of price cutting existed, the majority of firms were still able to maintain an industry standard by adhering to collectively agreed on rates set and published by rate bureaus.

Regulation as Exception?

It is telling of the “bitter sweet feeling of superior political correctness” referenced by Latour that despite regulatory exemptions to a number of products and carriers, detailed reference to them is virtually non-existent. For example, in *Sweatshops on Wheels* Belzer notes that:

Exempt carriers hauled commodities, including raw agricultural goods, newspapers, and several other specific products, that were free of federal regulation. Carriers that operated within designated urban commercial zones remained unregulated. Finally, the MCA of 1935 exempted intrastate and local cartage and shipments that were part of continuous air freight movements. Private carriers, that exist primarily for the transportation of goods or services produced or sold by non-transportation firms, also were exempt (2000: 61).

This passage bookends a section detailing the extent of regulatory controls implemented through the Motor Carrier Act of 1935, and immediately precedes a section that begins with the claim that: “Everything began to change in 1977...” (the year that Belzer pinpoints with the intensification of pressure for deregulation). Clearly these exemptions, which were in place in Canada as well (Mader 2000), meant that a considerable segment of the industry never operated within the context of a regulated environment. This being the case, Belzer’s claim that “everything began to change” might be somewhat overstated. Rather, things began to change for particular segments of the industry whereas, in the realm of public policy at least, things remained exactly the same for a considerable portion of truckers and trucking firms. The significance of these exempted sectors is not taken up again by Belzer. Rather, he is content to abide by a narrative that maintains exclusive focus on the state’s role in determining all facets of the industry’s historical trajectory. In contrast, Hamilton (2008) argues that the existence of

unregulated drivers served to undermine regulation from the start, while simultaneously generating a vocal anti-regulation, free market political faction within trucking's ranks itself. Describing trucks as "inherently political technologies used by agribusiness to craft 'free market' solutions to the farm problem", he argues that the existence of unregulated drivers on the road were integral to "materially undermin[ing the] political integration of state power, organized labour, and mass consumption"¹⁰ (2008: 5,7). Chapter 3 will build on Hamilton's identification of deregulation's material justification. For now, it is simply worth noting that an overemphasis on state policy causes Belzer to ignore the role that exempted carriers played throughout trucking's so-called regulatory era.

The "Deregulatory Era"

For Belzer (2000), advocates of deregulation premised their position on an appeal to economic theory. Observing what they felt to be unearned market shares and profits (i.e. rents), they argued that regulated trucking had created regional monopolies in an industry that, if subject to market competition, was resistant to monopolistic tendencies. Indeed, as stated above, the identification of excessive competition was one of the principle rationalizations for regulating the industry in the first place. Belzer explains this about-face in state rationale in terms of deregulation's ideological and political hegemony, arguing that regulation's line of reasoning had become "obsolete". Instead, "economists and private-sector manufacturing and distribution interests" claimed that trucking's regulation constituted a cartelization of the industry under which firms and drivers gained

---

¹⁰ Hamilton (2008) also draws attention to violent anti-regulation demonstrations by truckers themselves in the 1970s, some organized through editorials in the trade magazine, *Overdrive*.

rents from unearned market power¹¹ (Belzer 2000: 15). This was said to lead to inefficiencies that resulted in higher costs for providing trucking services, with the associated effect of creating higher shipping rates. Deregulation's principle aim then, was to reduce the cost of shipping goods, thereby reducing shipping rates to the benefit of shippers.

The easing of entry requirements, opening up of transportation routes and elimination of rate setting was a gradual and piecemeal process in both Canada and the United States. However, the Motor Carrier Act of 1980 is unanimously pointed to as the most significant piece of American deregulation policy (Bensman 2009; Peoples 2005; Belzer 2000). Its Canadian counterpart, the product of a seven year "trucking war" between Canada and the United States, was the Motor Vehicle Transport Act of 1987 (Mader 2000; Kaplan 1989). The stipulations of the Act were fully implemented by the provinces by 1989.

Easing of entry requirements in both countries consisted of dropping the "public convenience and necessity" stipulation. As a result, firms needed only to prove that they were legally and financially fit, and that their equipment met safety standards to qualify for an operating license (Mader 2000). Similarly, shipping routes were opened up to competition, and rate setting was gradually abolished. Predictably, shipping rates dropped as new and old firms – previously restricted from accessing particular markets – entered en mass, undercutting incumbent firms' rates in the process.

---

¹¹ Interestingly, Belzer makes passing reference to the role of economists in this assessment. As will be shown, others do the same, but without ever exploring or paying significant detail to how this influence is exerted. Instead, their contributions are treated as self explanatory elements of the general context that was/is deregulation. This is a classic example of treating what needs to be explained as the explanation itself (see Chapter 1)!

The easing of entry restrictions is also argued to have had the effect of dividing the industry into two distinct segments: truckload (TL) and less-than-truckload (LTL) (Corsi 2005; Swan and Burks 2005). The TL segment of the industry specializes in the point to point transportation of full trailer loads. They are simply hired to transport freight from one point to another. The LTL segment of the industry typically hauls trailers containing freight destined for more than one customer. As a result, multiple pick-ups, deliveries and the associated labour and logistics elements of performing them characterize firms' handling of LTL shipments. This requires extensive pick-up and delivery networks consisting of terminals to store and sort freight destined for different destinations, as well as the associated equipment and labour.

While the concept of TL and LTL hauls existed prior to deregulation, single companies typically performed both. The easing of entry requirements is credited with flooding the TL sector with new entrants (Swan and Burks 2005). This is because large capital investments in terminals and warehousing are not necessary to participate in the TL sector, as they typically are in LTL. Rather, the only capital investments required for participation in the TL sector is a truck and cellular phone. New firms were easily able to undercut the TL rates of established firms who were contractually obliged to continue providing collectively bargained wages, health insurance and pension plans. Preexisting firms who did continue to compete in the TL sector were only able to do so by eventually slashing wages and benefits considerably, as well as starting new hires at considerably lower wages and using employee stock ownership plans and profit sharing plans to hide cuts to wages (Swan and Burks 2005; Belzer 2000).

While new entry to the TL sector was markedly more drastic than its LTL counterpart, this is not to say that the latter was not opened up to competitive pressures. However, this competition consolidated amongst a declining number of firms that had already sunk considerable capital into sophisticated distribution networks. As a result, these firms tended to get bigger as opposed to smaller (Swan and Burks 2005). While rates of collective bargaining representation remain considerably higher than in the TL sector, this has not protected LTL drivers from declines in wages and cuts to benefits. Overall, Belzer (2000) estimates that 80 percent of savings for customers generated throughout the first 10 years of deregulation in the United States came from reductions in employee wages. Elsewhere, Bensman (2008) estimates an approximate 50 percent decline in the earnings of port truckers since 1980 when factoring in the loss of benefits associated with unionized employment. In an interview with an Ontario-based trucker with over 50 years of driving experience, Keschuk (2006) finds that his per-mile rate of pay today averages approximately ten or eleven dollars per hour. In 1955, that same driver made \$12.50 an hour, *unadjusted* for inflation. Reflecting on changes in employer-employee relations since the late 1970s, that same driver is compelled to remark that: Today, you're dick all. That's the whole thing about trucking today. It's just a job." (cited in Keschuk 2006: 16).

These comments reflect a palpable reorientation of prioritization in the industry from the lot of drivers, to that of shippers and consumers. Belzer (2000) claims that the tendency towards discount pricing is so extreme that carriers often offer discounts greater than 60 percent of their listed price. "Nobody", he claims, "pays 'retail' except the smallest shipper, such as the individual who ships packages via UPS" (2000: 45).

Employees weren't the only ones feeling the competitive crunch though, as firms themselves have reduced their profit margins to remain competitive (Corsi 2005; Belzer 2000).

(De)Regulations Theoretical Premises: A case of Competing Truths

According to Bensman (2009), economic theory has long recognized the inherently destructive nature of an unregulated trucking environment. This is because in the absence of rate setting, it is in the interest of trucking companies to accept low rates from shippers on return trips from their initial delivery. This low back-haul rate has the tendency to drive market prices down, thus becoming the standard rate. Belzer's aforementioned claim that arguments from economists and the manufacturing sector came to trump concerns stemming from this perspective tacitly suggest a changing of the ideological guard. Drawing on the concept of veridical regimes outlined in Chapter 1, this transition supports Foucault's insight into the irrelevance of histories of true and/or false. Clearly, economic theory arguing that regulation produces unearned market shares for trucking firms is no less true than economic theory positing conditions of destructive competition in the absence of regulation. What does matter in this scenario is the history of veridiction, where one perspective comes to present itself as more true than the other. However, appeals to ideology alone are not sufficient for explaining this history. Indeed, as outlined in Chapter 1, treating the onset of contexts such a neoliberal, or deregulatory eras of public policy constitutes a classic case of treating what needs to be explained as the explanation itself. For example, Belzer's fleeting reference to the role of economics in influencing state policy strikes me as a much more specific and likely useful topic to

explore than the idea of ideologically determined public policy itself. Similarly, McMullen notes that deregulation was supported by “newly developed econometric tools”, that showed “constant returns to scale” for the overall industry (2005: 12). For his part, Mader unknowingly addresses this issue of veridiction head on when he claims that public policy had been widely credited for stabilizing the trucking industry until “economists began showing the *true* costs of regulation” (2000: 12). The point of these observations is that trucking as an “inefficient” industry depended to some degree on the discursive and technical practices associated with economics to become conceptually intelligible, just as the “inefficiency” of horse-drawn wagons depended on bookkeeping techniques of that era (see Chapter 1). This point will be returned to in Chapter 3. For now it is worth noting that the practice of economics and adherence to economic expertise was pivotal in constructing a veridical regime pertaining to best practices in the trucking industry.

Belzer on Technology

It is interesting to note that while Belzer gives technology only passing thought in *Sweatshops on Wheels*, he does address its impact on the trucking industry explicitly in a 2002 contribution to the *Journal of Labor Research*. However, as opposed to treating technology as an impetus for transformation in and of itself, “Technological Innovation and the Trucking Industry: Information Revolution and the Effect on the Work Process” treats it as a direct outcome of deregulation. Consider the following:

I argue that [economic deregulation’s] shift to increased competition fundamentally changed the trucking industry, making it one of the most competitive industries in the U.S....In response to these competitive challenges, advances in information technology have been adopted

throughout the trucking industry to enhance carriers' competitiveness and meet customers' demands. This new technology increased the performance pressures on drivers and dockworkers who must meet more stringent time schedules under adverse conditions (376).

Perhaps even more interesting given the epistemological considerations covered in Chapter 1, is the division Belzer erects between technology and people affected by it. In the concluding sentence of "Technological Innovation and the Trucking Industry", he states that his findings "suggest that while technological change is important, the change frontier lies in industrial relations solutions" (2002: 393). Here, he envisions relevant political actors to be states, firms and unions. In contrast, I argue that a politics that considers the role of all actors in its concept of industrial relations holds greater political potential for progressive change than one that insists on considering states, employers and employees exclusively.

The Deregulation Narrative and its Implications for Politics

In summation, the deregulation narrative can be succinctly understood as emphasizing the state's removal of regulations that had guaranteed market shares for certified firms, and protected those shares from competition. The actors in this narrative are familiar ones: governments, unions, and firms. In this account, truckers and trucking companies are pitted against an ideologically austere state seeking to mobilize competitive market forces towards the selection of "winners" and "losers" in the age of free trade. Hyper-competitive market conditions associated with deregulation are seen as pitting firms against each other in a figurative race to the bottom, as labour costs are shed in the interest of undercutting competitor firms' shipping rates. The result is argued to be the

plummeting of shipping rates and wages. For drivers, this means needing to work longer hours in order to earn anything more than a mere subsistence wage. It is also taken to mean that highways become less safe, and that the industry itself struggles to attract labour.

Having provided evidence of these characteristics, Belzer turns his attention in *Sweatshops on Wheels* to prescribing a political project to remedy the poor quality of employment characterizing the industry. Early in the book, he articulates his political question as such:

The political question...is not whether or not we allow the market to regulate economic affairs. The question is how best to organize and regulate markets. Should we leave economic processes completely unrestrained, or is the well being of individuals and society better served if we harness the market processes through regulation and institutionalization? (2000: 13).

Once again affirming Belzer's treatment of the market as a natural state of being, this question eventually leads him to posit three political recommendations. While stating explicitly that his intention is not to re-regulate the industry, all three target public policy and consist of altering the relationship between the state, firms, and employees. They are: 1) extend the Fair Labour Standards Act (or the Employment Standards Act in Canada) to cover truckers; 2) revise hours-of-service-rules, and; 3) strengthen the industry through collective bargaining.

I argue that the emphasis on state policy stems from its parallel emphasis in explanations of how current states of affairs in the industry have come to be. To be clear, it is not my intention to suggest that these policy changes would have no effect on the

industry. Indeed they would be welcome. However, to repeat points made by Bruno Latour in Chapter 1:

Critical sociologists have underestimated the difficulty of doing politics by insisting that the social consists of just a few types of participants. It did not care to notice that there was not much chance for politics to succeed if the list of *bona fide* members making up the social world was drastically restricted in advance (2005: 250).

In this respect, a symmetrical account of exactly how current states affairs have come to be might not only bring the role of non-human actors into discussions about why/how the industry exists as it does, but also encourage resistance to, or regulation of, them. In this respect, I return to comments made in this thesis' Introduction concerning the idea that state policy might be more effective if a more dynamic account of exactly what needs to be regulated is given. It is interesting to note that something emphasized by Belzer throughout *Sweatshops on Wheels* is the fact that deregulation is simply a "political term". "The last 25 years", he argues, "have taken us not from regulation to deregulation, but from institutional regulation to market regulation" (2000: 17). In this respect, he posits a rather obtuse view to how work lives are regulated: either by institutions, or by the market. What he doesn't consider, is just how dynamic and varied regulatory controls can be. As reviews of the work of Latour and Foucault in Chapter 1 have shown, power – and by extension the way that things have come to be – always includes the operation of much more localized processes and phenomena, as well as an infinitely more numerous set of actors than the simple idea of a singular, coherent entity such as the state. Rather, as captured through the ideas of prescription, subscription and subjectivity, regulation of human conduct is infinitely more complex.

Summary

This Chapter has provided evidence of a deregulation narrative characteristic of explanations for transformation in the Canadian and American trucking industries, and the associated decline in quality of employment available within it. It has also shown how this diagnosis has led to political prescriptions that similarly emphasize state policy. While recognizing that state policy does play a role in shaping peoples' work lives, I have argued that it is by no means the only factor. The point that portions of the trucking industry were never subject to state regulation, and reference to the role of economists in bringing the idea of regulations "inefficiencies" into conceptual being were touched on to make this point. Chapter 3 will build on these observations by populating the story of trucking's historical trajectory, and the decline of quality employment opportunities within it, with actors other than those emphasized in the deregulation narrative.

Chapter 3

This chapter provides an alternative to the “deregulation narrative” evidenced in Chapter 2. While emphasizing the materiality to transformation in the industry, the role that various technologies have played in creating a “logistics imperative” for trucking firms is emphasized. I argue that factoring this account into explanations for the deterioration of working conditions will encourage more dynamic and ultimately effective political solutions.

In contrast to the identification of successive policy regimes, this chapter begins with a piecemeal listing of technological developments that have been integral to trucking’s historical trajectory. This is intended to challenge the idea of pre-regulatory, regulatory, and deregulatory eras neatly unfolding under the dictate of state policy. Instead, it demonstrates the role that non-human actors play in temporarily stabilizing particular states of affairs long enough to produce rationales for those policies. Turning to the issue of quality employment in the industry today, the role that logistics technologies in particular have had in altering work processes and standardizing customer expectations is examined. Variations of mobile communication systems, decision support systems, automatic vehicle/equipment identification systems, and electronic data interchange systems are singled out as key actors in this respect. The role that these technologies play in creating a logistics imperative is demonstrated through the rise of a logistics industry informing the idea of “best practices” as they relate to trucking. In this respect, the role of experts and knowledge production is also examined.

A Material Account of Policy Formation

As shown in Chapter 2, rationale for regulation of the trucking industry in the 1930s was born of a concern over the intensity of competition within it, as well as the threat that it presented to railways. Needless to say, these concerns did not emerge with the initial introduction of the motorized truck in the mid 1890s, nor within the locally contained markets that they originally serviced. Rather, they emerged hand in hand with developments in truck and highway technology that increasingly made trucking a viable mode of intercity and long-haul freight transportation. In this way, rationale for regulation was itself dependent on these shifting relations within networks constituted by human and non-human actors. However, while these rationales may have emerged at particular moments in the truck's techno-historical trajectory, it would be a mistake to understand them as reflecting a static ordering of techno-human relations as suggested by the idea of a "regulatory era". Rather, as is to be shown below, continued shifts in these relations began to produce rationales for regulation's undoing almost as quickly as they had solidified it.

Towards Regulation

The specific timing of the truck's emergence as a viable mode of intercity and long-haul freight transportation was integrally linked to the historical contingency that was WWI. This was the case in at least two particular ways. First, experimentation with the viability of long-haul trucking over less than ideal roadways was undertaken by the military, which also absorbed the costs associated with doing so (McMullen 2005). However, early designs and the trucks that they produced were the product of countless backyard

tinkerers, inventors and aspiring entrepreneurs (Karolevitz 1966). Military sponsored experimentation served to separate more durable models from their mechanically inferior counterparts, while generating calls for better maintained systems of national roadways at the same time. In his account of an experimental convoy that placed several different makes of truck in competition with one another, Karolevitz is inclined to remark that: “The inevitable process of survival of the fittest had come to the truck industry!” (1966: 57). In this way, particular models and particular orderings of mechanical components were standardized based on their performances at military, and eventually industry sponsored showcases and competitions.

Secondly, following the Armistice, surplus military vehicles – models of which were those that had proven their worth in earlier experimentations – were sold cheaply to civilians, thus forming the core of both Canada and the United States’ early trucking fleets (Mader 2000; Morganelli 2007). These trucks were also made available via lease, thereby prompting many drivers to undercut the prices of their competitors simply to assure their ability to make payments (Hamilton 2008). While this practice resulted in very small revenues for the truckers themselves, it proved necessary in order to maintain ownership of their means of livelihood.

Advances in truck and trailer technology throughout the interwar years continued to intensify competition between firms and with railroads. This intensification depended on technological developments that increasingly altered the spatial and temporal nature of trucking activities. In other words: the ability to drive farther and faster. For example, McMullen (2005) and Morganelli (2007) point to the development of pneumatic balloon tires as instrumental in realizing the possibility of intercity and long-haul trucking.

Commercialized in 1923, their emergence slowly displaced the wooden and solid rubber tires previously used, gaining near ubiquity by the 1950s. Resulting reductions in vibration and vehicle damage – as well as road damage – allowed larger and faster trucks to be built. Engine sizes began to increase from one or two cylinder models to as many as eight (Morganelli 2007). Diesel engines, which are more powerful and fuel efficient than gasoline engines, also provided a source of fuel that was, at the time, approximately one-third the price of gasoline (McMullen 2005). The installation of fifth wheels and detachable semi-trailers allowed trucks to haul three times the weight that they could beforehand. By the mid 1940's, this capacity had doubled again (Hamilton 2008; see also Mader 2000). Aluminum trailers manufactured around the same time allowed – in the context of weight restrictions – for greater payload for a given gross weight (McMullen 2005). Hydraulic brakes allowed these developments in engine size and weight capacity to occur without posing extreme danger to the drivers and other motorists. Electric headlights, which began to appear for the first time around 1912, made night driving possible while simultaneously creating the potential for delivery times to be cut nearly in half where drivers were willing to sacrifice sleep to outdo less willing competitors (Karolevitz 1966). All of these developments were underpinned by the construction of paved rural and interstate highway systems, a task that was itself dependent on developments in asphalt and concrete, as well as motorized graders and steam-rollers (Lay 1986).

To place this piecemeal listing of technological developments explicitly in the context of rationales for trucking's regulation, consider Bensman's (2009) claim that economic theory has long recognized trucking's tendency towards destructive competition (see

Chapter 2). This tendency was attributed to the incentive for firms to accept low backhaul rates to simply cover the cost of fuel and labour that they would have to spend regardless. However, this incentive did not exist within the localized markets that trucks serviced prior to the technological developments listed above. Clearly, costs associated with empty backhauls were negligible over such short distances. Rather, this economic theory was born from trucking's ability to participate in intercity and longhaul freight transportation. The same can be said about trucking's perceived threat to railroads. In other words, while the ability for these non-human actors to entrench themselves within geographically expanding supply/distribution chains owes to the durability of their mechanical composition, their relation to emerging policy regimes depends on expert rationalizations – in this case stemming from the field of economics – that simultaneously contribute to that entrenchment and generates relations among humans that support their continued existence. Needless to say, the listing of but a few non-human actors above demonstrates the role that they played in generating the logic for regulation in the first place. However, this role is overlooked by strict adherence to the deregulation narrative. Its focus on state policy attributes the onset of a Keynesian ideological era with responsibility for these changes, with little regard for the material elements that made the onset of that era possible. This disregard for the materiality of change produces a similar account of deregulation several decades later that paints the picture of an ideologically motivated state disrupting an otherwise content and stable industry. However, I contend that continued developments in trucking and warehousing technology served to contribute to regulations undoing almost as soon as it was implemented.

For example, the related emergence of fifth wheels and semi trailers can be argued to have simultaneously supported rationales for both regulation (vis-à-vis increasing load sizes and placing trucks in greater competition with railways) and deregulation. These technologies presented an increased competitive threat to railroads not only because they allowed for increases in the amount of weight that trucks were able to carry, but also because they were better suited to the transportation of new products that were simultaneously emerging throughout the inter and postwar years (McMullen 2005). Two examples include household products associated with developments in plastics technology, and the mass marketing of frozen foods associated with developments in flash freezing and refrigeration technology. As is to be shown below, the mass marketing of these goods depended on mass distribution networks that immediately created conflict within the context of a regulated trucking environment.

Plastic Goods and Frozen Foods

Developments in plastics technology throughout the early 20th century served to not only create a number of new household products, but also to make formerly expensive ones affordable to an emerging suburban middle class. For example, Fenichell (1996) credits the invention of Bakelite (patented in 1907 and distinct for being the first wholly synthetic plastic ever made) with single-handedly spawning the industrial design industry, as well as the associated glamour of stylistic obsolescence so important to keeping products moving off the shelves. Its resistance to heat and electrical conductivity made it a cheap and far less bulky material for telephone and radio casings, as well as for internal components of washing machines, stoves, and other household appliances.

Kitchenware, children's toys, jewelry, cameras, solid-body electric guitars and basses, and even kitchen, living room and bedroom sets are just a few of the other relatively small consumer products whose mass production depended on Bakelite and other synthetic plastics. By virtue of the semi-trailer's smaller size and geographical mobility, it presented itself as a far superior method of transporting these goods to specific destinations (i.e. households and local retailers) than the rail-bound trains that required an entire boxcar's worth of goods to justify a trip. Although railroads experimented with smaller, detachable shipping containers throughout the early and mid 20th century, Levinson (2006) ultimately finds these attempts to have been futile. His account of Pennsylvania Railroad's experimentation with this technology reveals that very few of the railway's customers produced enough freight to fill a container heading to a single destination. For example, he claims that it may have taken a week for a small factory to fill a railcar-size container with items destined for many different customers. This container would be moved by rail to an interchange point where it was unpacked, its contents sorted, and the items destined for interchange points farther down the line repackaged. Goods unloaded at particular interchange points would also be repackaged, and transported by truck to their specific destinations. In contrast, the smaller sized truck beds and semi-trailers required less unpacking and repacking, and were better suited to immediate shipping from point-to-point (Levinson 2006; see also Hamilton 2008). Railways continued to tinker with the smaller and more easily portable shipping containers, but ultimately to no avail. Instead, truck traffic in the United States more than doubled between 1946 and 1950 (Levinson 2006). With the advent of standardized detachable shipping containers conducive to truck, rail and ship travel in the mid-1950s,

short-haul rail transport became an essentially defunct business, while medium and long-haul rail became increasingly tailored to select goods (Levinson 2006)

Not only did the truck's flexibility in terms of both geography and freight volume produce a competitive edge over railroads, it also challenged geographical restrictions posed by regulation in the form of protected operating routes. The concentration of manufacturers in particular regions of both Canada and the United States meant that national and cross-border shipping required elaborate transfers and certification procedures. In this respect, Hamilton (2008) posits a particularly significant role for technologies associated with the distribution of frozen food in undermining this form of state regulation. He argues that the advent of frozen food and the related emergence of one-stop suburban supermarkets required the implementation of sophisticated networks of refrigerated warehousing and transportation. Frozen food production was the easy part, with capabilities for mass production having existed since the 1930s. Effective distribution networks on the other hand, were not in place until the mid 1950's. Hamilton explains:

The refrigeration equipment required to maintain frozen food at extremely low temperatures was rare or nonexistent in most warehousing, transportation, and retail facilities [in the 1930s]....But in the 1950s, frozen food packers relied on new warehousing and transportation technologies to convince U.S. consumers that frozen orange juice and TV dinners were truly 'luxuries for the masses'. In doing so, frozen food producers contributed to the post- World War II transformation of the economy, as manufacturing took a back seat to distribution and retailing in driving economic growth and consumer abundance (2008: 120).

Once again, the impetus for the frozen food industry's emphasis on distribution was not just a matter of needing to keep their products frozen. Given the geographic positioning of frozen food manufacturing plants primarily in the American Midwest, regulatory

restrictions made effective transportation to “the masses” subject to considerable amounts of regulatory red tape. As a result, the frozen food industry challenged the Interstate Commerce Commission’s (ICC) definition of a “raw agricultural product”, arguing that frozen food fit the bill and should therefore be eligible for exemption from ICC regulation (see Chapter 2). They won, thereby substantially increasing the number of unregulated trucks on American roadways. For Hamilton, the decision to deregulate the shipment of frozen food created a template and a justification for deregulation of the industry several decades before the passage of the Motor Carrier Act of 1980.

This claim is compounded by the argument that the establishment of national just-in-time delivery networks specific to the frozen food industry set a standard that was soon to be emulated by virtually all manufacturing industries. Associated developments in moisture-proof packaging such as those stemming from the development of cellophane created the potential for altogether new timelines for products such as cakes, cookies, cigarettes and cigars (Fenichell 1996). This lengthening of “shelf life” was directly linked to the idea of self-serve supermarkets that could afford to hold large quantities of stock formerly unfathomable by virtue of it inevitably going bad. In this context, the technological and logistical ability to geographically lengthen supply chains posed a challenge to a regulatory regime focused on the protection of local territories for trucking firms. For example, not only were geographical restrictions posed by regulated operating routes challenged by just-in-time networks of distribution, but they also served to empower consumers and shippers in the sense that it created expectations for products to be made available as quickly as possible, if not at all times (Corsi 2005). This had the effect of undermining entry restrictions and rate controls in the sense that empowered

consumers and their advocates began to challenge a system that impeded speed, and cost more money by virtue of entry restrictions and rate controls.

Forklifts, Pallets and Shipping Containers

Hamilton (2008) cites two other major technological developments in transportation and warehousing that occurred around the same time as refrigerated trailers and warehouses: motorized forklifts and standardized pallets. As with the use of trucking for long-haul freight transportation, these technologies were first used on a large scale by the U.S. military – this time during World War II¹². Of course their impact extended far beyond simply frozen foods. Studies conducted by the U.S. Navy produced “evidence” that with forklifts and pallets, one man could accomplish in two hours the work that would formerly have taken fourteen men four hours (Hamilton 2008: 120-21). The conducting of this study is in and of itself an interesting development in the history of transportation and warehousing insofar as it produced knowledge that subsequently led to the adoption of “continuous flow principles” of assembly line manufacturing. Here, conveyor belts and tow lines contributed to placing pallets in a state of near perpetual motion as they were moved from trucks delivering manufactured goods from their point of production, to trucks picking them up for distribution to retail outlets. Drawing once again on developments in plastics technology, the use of shrink wrap to bundle items on pallets deserves consideration here too. Needless to say, Hamilton attributes these technologies of mass distribution with making just-in-time supply chains possible.

---

¹² According to Levinson (2006), forklifts had in fact been used since the 1920s, but did not come into widespread use until the 1950s.

Elsewhere, Levinson (2006) attributes similar significance to the standardized inter-modal shipping container. While shipping containers had been in existence since at least the 1920's, the use of standardized containers conducive to transport by truck, rail and ship did not come about until the mid-1950s. Stating that: "The container, combined with the computer, made it practical for companies like Toyota and Honda to develop just-in-time manufacturing..." (2006: 10), he goes on to credit it with making global supply chains practical, affordable, and time effective. Of course, this ability coupled with the potential to access cheap labour markets led to widespread support from economists, business leaders and legal analysts for companies to "go global" in the interest of maximizing profits and returns to shareholders. As just one mode of transportation within increasingly global and just-in-time supply and distribution chains, regulatory restrictions on trucks began to have the appearance of being "inefficient. As is to be shown below, the associated rise and emphasis on logistics stemming from the need to coordinate these increasingly complex supply chains further served to undermine the geographical restrictions imposed by a regulated trucking industry.

Mass Distribution Networks and the Weakening of Labour

Refrigerated trailers and warehouses, forklifts, pallets and shipping containers are also argued by Hamilton (2008) and Levinson (2006) to have been instrumental in undermining the relative power held by labour throughout the post-war period. Levinson's (2006) emphasis on the shipping container's role in geographically extending supply-chains that were/are not only cost effective, but time effective as well simultaneously reduced the value of domestic labour. The technological ability to

relocate specific functions within traditional supply chains to places where labour was cheaper contributed to weakening the bargaining power for all workers within that supply chain (Levinson 2006). So while the physical labour of truckers may remain a necessity within the industry, their ability to influence terms and conditions of employment and work processes is intricately related to the plight of other labourers in retail, wholesale and manufacturing industries.

For his part, Hamilton argues that warehouses as “places of movement” as opposed to “places of storage” altered the nature of distribution logistics by cutting out wholesalers from the distribution chain (2008: 121). By virtue of this transition, manufacturers, newly established supermarkets and big retailers found it cheaper to build their own regional warehouses that were considerably smaller than those used by wholesalers for the principle purpose of storage. Reductions in the number of workers needed in these technologically sophisticated warehouses of movement, as well as the outright bankruptcy of wholesale companies led to massive lay-offs in the warehousing sector. This significantly impacted the ability for labour unions – such as the Teamsters, who routinely covered both truckers and warehouse workers – to dictate working conditions in both industries.

Logistics Technology

If developments in plastics technology, frozen food and the associated emergence of refrigerated trailers and warehouses, forklifts, pallets, and shipping containers can be said to have facilitated the emergence of global just-in-time supply and delivery chains, the emergence of a number of information technologies related to their management

unquestionably intensified this trend. However, it is important to note that in none of these cases are the temporarily stabilized techno-human networks and the power effects that they produce a matter of inevitability. Rather, even where particular technological aspirations are eventually fulfilled, and they find themselves securely embedded within particular networks, this embeddedness is the result of those technologies struggling to find their place, and persevering in the face of resistance along the way¹³. Several examples have been given throughout to make this case. Chapter 1 noted that early truck models had to persevere in the face of strong resistance from a horse partial public that was weary of the noise, smell and danger of motorized vehicles roaming their cities. As these trucks developed the capacity for intercity and long-haul freight transportation, different models literally had to compete against each other in military and industry sponsored competitions that saw many models cast aside, with others rewarded through the standardization of their design and mechanical orderings. Similarly, the conduciveness of new household products throughout the early and mid 20th century to transport by truck saw railcars increasingly marginalized, until inter-modal shipping containers emerged that secured a place – if only a relatively small one – for rail transport within global just-in-time supply chains. The eventual embedding of these non-human actors within distribution networks have been shown to depend not only on the durability of the specific technologies, but also the rationalizations that they produce through forms of expert knowledge. Similarly, contemporary monitoring technologies and their role in stabilizing particular power effects responsible for generating ideas about “how things are done” in the industry are the product of struggle and perseverance.

---

¹³ Consider Latour’s concept of “trials of strength” mentioned in Chapter 1.

Of course, the idea of the trucking industry as a technologically sophisticated one is at odds with pop-cultural perceptions of drivers as “Knights of the Open Road” or “Asphalt Cowboys”¹⁴. Noting the persistence of this imagery, Feschuk (2006) explains that this romanticism stems from a perception of truckers as autonomous workers capable of exerting control over their work process. Elsewhere, Hamilton reflects that “when a man’s workplace [is] the road, [he takes] no orders from the factory foreman and [faces] no line speed-ups or stopwatch-toting scientific managers” (2008: 110). However, even as far back as 1940, productivity enhancing monitoring technologies have been implemented in attempts to scientifically manage the industry, and imbue management with greater control. Among the first of these was the tachograph. Manufactured by Sangamo Electric Company in 1940, the tachograph was designed to measure distances traveled, speed, and frequency and duration of stops (Hamilton 2008). It recorded this information by way of small cutting knives located on the inside of the tachograph casing. Rotating based on speed and time, these knives carved lines onto a wax chart with numerical equivalencies already on them. Hamilton (2008) describes a 1956 advertisement for a model manufactured by Wagner Electric boasting the ability to provide clear evidence of “unscheduled stops”. However, these early models proved easy to tamper with, as evidenced by a comment from a trucking firm manager who claimed that “90 percent of the cutting knives in the doors of the tachograph clocks have been removed and destroyed by drivers” (cited in Hamilton 2008: 110). In this respect, the tachograph can be said to have been successful at monitoring a relatively small number of drivers. However, its aspirations have been built on over the years by both mechanical

---

¹⁴ For examples from film, literature and song, consider the Humphrey Bogart classic *They Drive by Night*, representations of truck drivers in John Steinbeck’s *The Grapes of Wrath*, and Hank Williams’ “Lowdown Truck Driver” respectively.

and human actors. Today, a combination of on-board computers, logistics software, and information transfer technologies have improved and intensified the original goals of the tachograph. In practical terms, detailed monitoring and decision support for drivers and dispatchers means that:

...commercial trucks are dispatched based on advanced routing procedures; that trucks incorporate sensor-based technology that continuously monitors fuel flow, temperature and other operating conditions; and that drivers are in contact with dispatches and fleet managers throughout the course of the day. Managers passively monitor vehicle locations through GPS-based reporting systems; on-board data recorders maintain records of vehicle speed and other data...[and] driver work/rest cycles are increasingly mandated by scientific data on human performance and fatigue and that sophisticated databases are used to collect and analyze data on the operation of all the components of the commercial trucking and transportation systems (Belman et al. 2005: xiv).

While this passage captures the degree to which technology shapes day to day operations in the industry through reference to dispatch procedures, sensor-based mechanical applications and communication/monitoring between drivers and dispatch/managers, it also alludes to the role that these technologies play in generating analyzable data. This latter function is particularly interesting insofar as it illustrates the connection between technology and knowledge stemming from it. As is to be shown through a number of examples below, this knowledge is instrumental in defining “best practices” that constitute the formation of veridical regimes as they relate to the trucking industry. However, first it will prove useful to provide an overview of specific technologies in widespread use throughout the industry today.

Logistics Technologies in Use Today

Hubbard (2003) pegs the diffusion of early on-board computer and decision support technology to the late 1980s. Four such technologies are highlighted by Nagarajan et al (2005) for their prominence in the industry today. These are: mobile communication systems, decision support systems, automatic vehicle/equipment identification systems, and electronic data interchange systems¹⁵. These will be described in turn below to give an idea of the kinds of technologies used in the transportation, warehousing and logistics industries.

Mobile Communication Systems (MCS) provide positioning information and messages from a truck to its dispatcher. It is superior to cellular technology in that it may also utilize specialized mobile radio systems and satellite communication systems. Basic systems include mobile terminals, on-board computers, voice communications, network infrastructure, peripheral devices, and software interfaces. Common applications include positioning reporting, estimating times of arrival, keeping drivers on route (a function warns the driver and/or dispatcher and records instances of when the truck is out of the prescribed route), fuel tax mileage reporting, and decision support systems that “dynamically optimize” parameters such as maximization of contribution per truck per day and driver productivity.

MCSs’ function as a monitoring technology has had the effect of undermining the aforementioned perception of truckers as autonomous workers free from the stifling oversight of a factory foreman or work site manager. Feschuk (2006) provides a telling

---

¹⁵ Unless otherwise indicated, information provided below concerning the functions of these technologies is taken from Nagarajan et al (2005).

example of this in his account of a discussion with a Winnipeg-based driver on the topic of his on-board MCS. Annoyed with the devices seemingly incessant beeping (an indication of an incoming message or instruction from dispatch), the driver recounts an episode that saw him tearing it from its mount on the dashboard and throwing it out the window. The site of the rectangular touch screen monitor, its cord still attached to the dashboard and stretched to the limit, bouncing off the side of his truck as he continued down the highway drew remarks of admiration over his CB radio from other drivers. In the words of the driver himself: “All these other truckers got on the radio and said, ‘Wow! I wish I could do that’. And I said, ‘if you want to do it, just do it.’” (Feschuk 2006: 76). According to Feschuk (2006), the perception among drivers that dispatchers seem to take pleasure in needlessly harassing them via their MCSs is a common complaint within the trade.

Decision Support Systems (DSS) synthesize data and provide recommended courses of action, particularly for dispatchers. For an example of just how complicated the matching of trucks to trailers and drivers to loads can be, consider the following:

A firm with three trucks and three loads to haul faces six different dispatch options. If the firm doubles in size, it faces 720 choices with six trucks and six loads. The number of possible combinations increases into the millions with just 10 trucks and as many loads (Nagarajan et al. 2005: 149).

DSS technologies help plan routes through mathematical and computer programming algorithms. Interpretation of data produced requires skill as well. Nagarajan et al. explain that “responsible personnel who can interpret the trends specific to their area of expertise make decisions based on [suggested courses of action]” (2005: 149). Artificial

Intelligence technology in DSS “learns” human behaviour based on historical tendencies towards particular courses of action pursued in specific scenarios. However, in the interest of efficiency, prescribed routes and associated expectations in terms of arrival times generated through DSS have the potential to conflict with unforeseen delays stemming from weather, traffic, construction or body functions. Furthermore, they script routes in such a way that drivers are no longer able to utilize knowledge derived from personal experience. For example, alternate routes comparable in terms of driving time may provide more interesting scenery or serve simply to break the monotony of routinely driving the same highways. Similarly, alternate routes that may bring drivers by their favourite chip stands, truck stops, or even the houses of friends and/or relatives for a quick lunch are no longer possible.

Automatic Vehicle/Equipment Identification Systems (AVEIS) operate through transponders that are programmed with identification, authorization and performance information specific to the truck, driver, trailer, or piece of equipment they are assigned to. Radio signals transmit information to a remote reader. This can be used to identify trucks and equipment entering or exiting a yard, equipment available within a yard, electronically bill trucks passing through toll lanes and at fuel pumps, and electronically assess driver and freight information at weigh stations and border crossings. For example, shipping containers are often assigned AVEIS transponders that transmit information to a computer utilizing a Decision Support System as they arrive via truck to port. Information produced through DSS software in turn instructs drivers where to drop their load through their on-board Mobile Communication System (Levinson 2006).

AVEIS also provide information on maintenance history, service schedules, cargo information and real time truck performance characteristics (Nagarajan et al 2005).

Electronic Data Interchange (EDI) transmits data between two or more different companies. They serve to replace freight bill or bills of lading (shipment information), while also making them available on demand. Further uses include shipment status and tracking information, freight information and charges, freight payment, and loading and routing guides. EDI systems reduce paperwork, time required on telephones, postage and handling charges, and duplicated manual entry. For example, Corsi (2005) notes that as more and more businesses shift to just-in-time supply chains, they simultaneously move their business transaction data from “legacy systems” to enterprise resource planning (ERP) systems. A variation of EDI systems, Corsi (2005) describes ERP systems as centralized databases that coordinate and feed all of a company’s business activities. These include the recording of order entries, manufacturing details, procurement of products and services, order tracking, accounting and finance, human resource management, order fulfillment and customer service. Information pertaining to these diverse activities can be made available to different groups within an organization (i.e. respectively self-contained accounting and sales departments), as well as between organizations. Such techniques open the door to new ways for trucking companies to do business, as evidenced in an extreme degree by United Parcel Service (UPS). For example, UPS and Nike have a partnership that sees UPS handle select online orders on behalf of the sporting wares giant. Nike shoes and warm-ups are stored in a UPS warehouse in Louisville, Kentucky. Online orders placed at Nike.com are received by a

UPS call centre in San Antonio, who dispatches their own vehicles as need be to fulfill those orders. This means that UPS employees not only receive and deliver Nike orders, but that they also select, inspect and package them (Friedman 2006: Nagarajan 2005). UPS has similar relationships with a number of large multinationals including Toshiba, a partnership that sees UPS employees certified to repair and assemble computer and printer components (Friedman 2006).

Logistics and the Production of Expert Knowledge

While undoubtedly a pioneer of the practice, providing logistics services in this manner is hardly the sole domain of UPS. In fact, an entire industry segment known as third party logistics (3PL) providers have exploded over the course of the last 20 years (McMullen 2005). 3PLs provide logistics management services to companies who may not have the expertise or the resources to tap into global supply and distribution networks on their own, as well as companies that would prefer to direct their resources to other facets of their business such as in the case of Nike. These have had the effect of allowing trucking companies without in-house logistics technology and human skills to compete by outsourcing these functions. Langley (2005) estimates 3PL firms' reported revenues to have been somewhere around \$65 billion in 2002, while demonstrating an annual growth rate of approximately 6.9 percent. Clearly, this has created pressure for firms to differentiate themselves from competitors on the basis of their logistics capabilities, as opposed to just their transportation abilities. Perhaps telling of this expectation, recent years have seen the emergence of fourth party and so-called "advanced services" logistics

providers. Langley (2005) provides the following figure to capture the range of logistics services available to globally competitive firms:

Logistics Services by Performing Party

The base of the pyramid reflects the activities undertaken by a manufacturer that chooses to perform all of its logistics activities internally. This may include the purchasing of its own fleet of trucks, trailers, warehousing space, and information technology. The second level captures the range of trucking, warehousing and shipping services provided on a for-hire basis by commercial trucking firms. These firms may vary in their level of technological and by extension, logistical sophistication. The third level of the pyramid reflects services provided by third party logistics providers (3PLs). 3PLs provide services ranging from those associated with transportation, to warehousing and distribution, to financial planning, to providing strategic industry information. As shown

in the right hand column of the figure, these services typically cover supply/distribution chain activities that occur across different locations. According to Langley, fourth party logistics providers (4PLs) “deliver comprehensive supply chain solutions” by overseeing the activities of multiple entities involved in the manufacturing and distribution of a firm’s product(s) across presumably even larger regions than 3PLs (2005: 102). This means overseeing the activities of perhaps multiple basic service and 3PL companies contracted by a particular firm. Finally, advanced services might be sought by 4PLs to create “additional value” through the management of global supply/distribution chains.

Rendering the logistics industry intelligible through the pyramid above is interesting insofar as it orders relationships between various players, thereby scripting how logistics operations are “done” in the process. In this respect, it is an example of a contribution to a veridical regime detailing the idea of “best practices” in the industry. The production of knowledge related to the practice of logistics management is an interesting phenomenon in and of itself. Returning to the example of UPS, its logistics management operations are supported by a 60 person research team operating out of its Timonium, Maryland-based Operations Research Division (Friedman 2006). Comprised largely of engineers and mathematicians, this team works on the development of supply chain algorithms used for decision support system software to coordinate intermodal transportation of packages from around the world. So prevalent has this type of mathematical problem solving become, that it has inspired its own “school” of mathematics called “package flow technology” (Friedman 2006). UPS also employs meteorologists and “strategic threat analysts” to “track atmospheric or geopolitical thunderstorms” that may impede the smooth flow of its global distribution chains.

Examples such as UPS's Operations Research Division are not the sole outcome of profit generating private practice either. Universities in Canada and the United States house institutes and departments such as The Institute for Transportation and Logistics at Memorial University. The similarly titled Center for Transportation and Logistics is housed at the Massachusetts Institute of Technology while Princeton University has a Center for Transportation Information and Decision Engineering. The New Jersey Institute of Technology explicitly links the relationship between effective distribution networks and profitability through its National Center for Transportation and Industrial Productivity and Georgia Tech houses a Supply Chain and Logistics Institute. Of course, in the realm of privately funded non-profit research, Michael Belzer oversees the Sloan Industry Foundation's Trucking Industry Benchmarking Program. This online system provides company performance measurements along a number of different lines so that industry executives can model their own business practices on the "best practices" of others in their specific industry segment¹⁶.

The existence of a logistics industry and the institutes, programs, mathematicians, engineers and professors that constitute it are interesting insofar as they are responsible for producing knowledge about how logistics management is done. In this respect, when Hubbard finds that "on-board computer diffusion and related logistical improvements were nontrivial contributors to economic growth in the United States during the 1990's" (2003: 1329), or when Corsi claims that technologically sophisticated "Advanced Truckload Firms" set the standard for logistics practices in the industry, they are attributed with a degree of institutional expertise and inherent authority (i.e. power

---

¹⁶ Information on the Trucking Industry Benchmarking Program can be found at: <http://www.ilir.umich.edu/TIBP/index.cfm>.

storage). In this respect, they establish common sense ideas about how things are done within the industry in a way that is consistent with Foucault's idea of veridical regimes and self-regulation. Of course, the potential for the emergence of this regime is itself dependent on techno-human networks where behaviours prescribed by non-human actors are indeed subscribed too. However, the lengthening of these networks – the diffusion of particular interactions between humans and non-humans – is dependent on this expert knowledge.

The Logistics Imperative

The use of Mobile Communication Systems, Decision Support Systems, Vehicle/Equipment Identification Systems, Electronic Data Interchange, and countless other technological applications in combination with scientific evidence produced by experts can be said to have created a logistics imperative for trucking firms to fulfill. Karlin and Liker pinpoint the widely perceived origin of this imperative when they define logistics management as “all of the activities necessary to pick up freight from the supplier and deliver it to the customer – in the form desired by the customer, at the time desired by the customer, and in the quantity desired by the customer” (2005: 214). This definition accurately emphasizes the degree to which those involved in logistics management systems – namely trucking and logistics firms – compete on the basis of customer satisfaction.

Without identifying the concept of a logistics imperative outright, the view that technology in support of logistics activities has become essential is widely supported within the academic literature. For example, Nagarajan et al. claim that “a strong

technology base is as important as the ability to move freight....Technology choices can differentiate between survival and extinction” (2005: 156). In a refreshing comment on just how played out the deregulation narrative has become, Swan and Burks claim that:

The story of how the end of economic regulation forced poor competitors to drop out and permitted efficient competitors to prosper is by this time old. A newer twist to the old story is how technology has played a role in who wins and who loses. Not just new technology, but the right technology (2005: 43).

Similarly, McMullen finds that:

Carriers have changed marketing strategies to meet the increasingly diverse demands of shippers. Some carriers still compete on price, but increasingly carriers have become more focused on selling service quality. Important aspects of service quality include fast service, reliable service guarantees, availability of equipment, and the use of various information technologies such as electronic data interchange that have been adopted largely to meet shipper demands (2005: 16).

As one might expect, a number of surveys and studies have also been conducted to support these claims. For example, A 2003 survey of logistics providers found that 90 percent of respondents were in agreement with the claim that “our customers are placing greater emphasis on logistics customer service” (Langley 2005: 108).

This competition motivated logistics imperative is further evidenced by how trucking firms advertise themselves to the general public and potential customers. Canada and the United States’ major highways are invariably dotted with trailers advertising their firms’ logistics capabilities, sometimes incorporating the specialization into their name. For example, Leonard’s Guide – the leading provider of print and online shipping directories for North American trucking, warehousing, third party logistics, and air cargo companies – lists 19 of 26 Canadian Truckload and Less-than-Truckload firms

with the word “logistics” in their name on their first page of their online directory. The same listing of companies in the United States shows 14 of 32 firms with the word “logistics” in their name on the first page of results. However, other descriptors are used to convey the idea that trucking companies don’t just move freight, but provide answers to distribution challenges/problems. For example, the word “solutions” or “systems” is often tacked onto company names, such that All Solutions and Evans Distribution Systems claim to be “a true extension to your supply chain” and “a full service third party logistics provider” respectively¹⁷.

Summary

In contrast to the deregulation narrative’s emphasis on state policy in transforming work processes and quality of employment in the industry, this chapter has detailed the role of nonhuman actors in bringing about the same state of affairs. In identifying a technologically facilitated “logistics imperative”, the idea that technologies of mass distribution such as forklifts, standardized pallets, shrink wrap, and decision management systems work in unison with monitoring, communication, decision-making and data generating technologies to facilitate changes in supply chains, distribution networks, and the management of trucking fleets has been put forward. I have argued that a logistics imperative that trucking firms must adhere to in order to remain competitive has rationalized dispatching and routing procedures in such a way that considerations pertaining to driver concerns – such as maintaining a reasonable work-life balance – are secondary to “best practices” determined by technology itself, as well as knowledge

---

¹⁷ These claims accompanied each company’s listing on Leonard’s Guide. Available at: www.leonardsguide.com.

generated by economists and industry experts through data provided by various monitoring technologies. The availability of these technological capabilities has been, I argue, as significant in transforming the way business is conducted in the trucking industry as state policy. Furthermore, they have acted in unison with non-state actors to produce truths about the industry that inform the formation of state policy itself. Political implications stemming from these observations will be addressed in the Conclusion.

Conclusion

In contrast to the “statecentric” deregulation narrative identified and outlined in Chapter 2, this thesis has made a case for the political value of an alternative account of transformation in the Canadian and American trucking industries. Working from the perspective that effective prescriptions require accurate diagnoses, this account has emphasized the materiality to socio-economic change. It has argued that particular states of affairs are assembled through techno-human networks constituted by both human and non-human actors. The temporary stabilization of these networks can be said to generate specific power effects through the formation of technically and discursively constituted veridical regimes. In this respect, technologies themselves can be said to cultivate and prescribe particular behaviours to human actors. Similarly, various forms of expertise reflecting on the potential of different technologies contribute to the establishment of “truths” about how particular things are done. These “truths” inform a process of self-regulation that sees people align their own personal conduct with what appear to be common sense ways of doing things.

In the context of trucking specifically, this view to power leads to the identification of a number of nonhuman actors who, in their interactions with drivers, dispatchers, managers, shippers (i.e. retailers and manufacturers), consumers, economists and mathematicians – to name only a few – generate particular capabilities and expectations within the industry. In contrast to ideologically motivated states dictating terms and conditions of employment through public policy, I have argued that public policy is itself determined through these techno-human networks and the veridical regimes that they produce.

For example, technological developments in truck, trailer and highway technology were shown to have facilitated the possibility for intercity and longhaul freight transportation. This created competition with railroads and between trucking firms themselves, which is argued to have produced the rationale for trucking's regulation in the first place. However, continued shifts in the techno-human relations that produced that rationale began to produce justification for the industry's deregulation as well. The example of the semi-trailers' suitability to transporting products stemming from developments in plastics and flash freezing technology were argued to have led to distribution networks that challenged certification and operating route regulations, while shipping containers, forklifts and standardized pallets contributed to the formation of global just-in-time supply/distribution chains. Subsequent developments in logistics technologies such as mobile communication systems, decision support systems, automatic vehicle equipment identification systems and electronic data interchange systems have intensified the ability to monitor elements of these supply/distribution chains. This ability has generated expectations among consumers and customers of trucking firms that logistics technology will provide faster and more predictable transportation services. This has also had the effect of intensifying competition between firms along the lines of both price and the sophistication of their logistics capabilities. I refer to this as a logistics imperative, and argue that it provides a more accurate diagnosis of how terms and conditions of employment – particularly wages and working hours – have deteriorated within the industry.

Politically, I have argued throughout that a more accurate account of how things have come to be will suggest more effective political strategies for changing them. In

other words, effective prescriptions require accurate diagnoses. The value of an accurate diagnosis of particular states of affairs is that through explicit discussion of the actors implicated in the formation of specific techno-human networks, their assembly no longer seems essential. Rather, they appear unstable and ephemeral. However, while instances of tampering with the non-human actors revealed in such a material account – such as those associated with the tachograph and the account of a driver throwing his on-board mobile communication system out the window – may strike one as an obvious political response, such extreme and even violent solutions need not be the outcome. Indeed, I can anecdotally attest to the opinions of several drivers and dispatchers that I have talked to whose view of the technologies that shape their work processes are anything but negative. Rather, explicit discussion of the relationship between particular technologies and the regimes of veridiction that they help produce serves to disrupt the necessity of common sense “truths” and practices, opening those technologies up to different purposes.

For example, Feschuk (2006) has noted that technologies such as those covered in Chapter 3 have created the potential to estimate arrival times of two and three day journeys down to the minute. Elsewhere, Swan and Burks (2005) have similarly noted that the pinpoint accuracy with which information technologies are able to map out drivers’ days have led to a rise in scheduling pick-ups and drop-offs by appointment. With this level of predictability, an obvious alternative to the lengthening and intensification of work days is the ability to use these same technologies to guarantee something close to an 8 hour day. In the same line of thought, state policy itself might be informed by explicit discussion of the non-human actors implicated in the notion of labour/industrial relations in the industry. In this respect, state regulation of how

particular technologies are used poses similar potential to decrease the competitive pressures that currently stem from the logistics imperative. However, for these political approaches to become conceptually possible and practically probable, explicit discussion of the human and non-human actors, or stakeholders, responsible for the assembly of current states of affairs must take place. Hopefully, this thesis has made a small contribution towards this goal.

Works Cited

- Acker, Joan. 2006. *Class Questions: Feminist Answers*. Lanham: Rowman and Littlefield Publishers.
- American Trucking Associations. 2010. "Professional Truck Drivers and the Industry". Available at: <http://www.truckline.com/Programs/Documents/Image%20Tools%20and%20Information/Trucking%20Industry.pdf>
- Apostolopoulos, Yorghos et al. 2010. "Work Induced Morbidities Among Truck Drivers in the United States" in *American Association of Occupational Health Nurses Journal*. vol. 58, no. 7.
- Barry, Andrew. 2001. "The Technical and the Political" in *Political Machines: Governing a Political Society*. New York: The Athlone Press.
- Belman, Dale et al. 2005. "Preface" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Belman, Dale, Francine Lafontaine and Kristen Monaco. 2005. "Truck Drivers in the Age of Information: Transformation Without Gain" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Belman, Dale and Kristen Monaco and Taggart Brooks. 2004. *Sailors of the Concrete Sea: A Portrait of Truck Drivers' Work and Lives*. East Lansing: Michigan State University Press.
- Belzer, Michael
2000. *Sweatshops on Wheels: Winners and Losers in Trucking Deregulation*. Oxford: Oxford University Press.
2002. "Technological Innovation and the Trucking Industry: Information Revolution and the Effect on the Work Process" in *Journal of Labour Research*. vol. 23, no. 3.
- Bensman, David. 2009. "Port Trucking Down the Low Road: A Sad Story of Deregulation". Report prepared for Demos: Effective Regulation for the 21st Century.
- Burawoy, Michael. 2005. "For Public Sociology" in *American Sociology Review*. vol. 70, no. 1.
- Bureau of Labor Statistics. 2009. "Occupational Employment and Wages". 53-3032.

- Callon, Michel. 1986. "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay" in J. Law (ed.). *Power, Action and Belief: A New Sociology of Knowledge?*. London: Routledge.
- Canadian Trucking Alliance. 2009. "Trucking in Canada. Available at: <http://www.cantruck.ca/iMISpublic/Content/NavigationMenu2/CTAIndustry/TruckinginCanada/default.htm>
- Chomsky, Noam. 1999. *Profit Over People: Neoliberalism and Global Order*. New York: Seven Stories Press.
- Conyngham, Michael E. 2005. "Future Truck Driver: Where Will They Come From, Why Would They Take the Job?" in Dale Belman and Chelsea White (eds.). *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Corsi, Thomas M. 2005. "The Truckload Carrier Industry Segment" in Dale Belman and Chelsea White (eds.). *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Dean, Mitchell. 1999. *Governmentality: Power and Rule in Modern Society*. Thousand Oaks: Sage Publications
- Fenichell, Stephen. 1996. *Plastic: The Making of a Synthetic Century*. New York: Harper Collins.
- Feschuk, Dave. 2006. *Every Highway : Riding Shotgun in the Big Rigs*. Toronto : McLelland and Stewart.
- Flyvbjerg, Bent. 2001. "Methodological Guidelines for a Reformed Social Science" in *Making Social Science Matter: Why Social Inquiry Fails and How it Can Succeed Again*. Cambridge : Cambridge University Press.
- Foucault, Michel
1977. *Discipline and Punish: The Birth of the Prison*. New York: Random House
- 1994 [1974]. 'Prisons et asiles dans le mécanisme du pouvoir' in *Dits et Ecrits*. vol. 11.
- 2000 [1982]. "The Subject and Power" in J. Faubion (ed.). *Michel Foucault. Power*. New York: New Press.
- 2007 [1978]. *Security, Territory, Population: Lectures at the College de France 1977-78*. New York: Picador.

- 2008 [1979]. *The Birth of Biopolitics: Lectures at the College de France 1978-79*. New York: Palgrave MacMillan.
- Friedman, Thomas L. 2006. *The World is Flat: A Brief History of the 21st Century*. New York: Farrar, Straus and Giroux.
- Glasmeier, Amy and Priscilla Salant. 2006. "Low Skill Workers in Rural America Face Permanent Job Loss" in Carsey Institute Policy Brief No. 2. Spring, 2006.
- Hackworth, Jason. 2008. "The Durability of Roll-Out Neoliberalism Under Centre-Left Governance: The Case of Ontario's Social Housing Sector" in *Studies in Political Economy*. vol. 81.
- Hamilton, Shane. 2008. *Trucking Country: The Road to America's Wal-Mart Economy*. Princeton: Princeton University Press.
- Harvey, David. 2005. *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
- Herod, Andrew. 2006. *The Dirty Work of Neoliberalism: Cleaners in the Global Economy*. Oxford: Blackwell Publishing.
- Hubbard, Thomas N. 2003. "Information, Decisions, and Productivity: On-Board Computers and Capacity Utilization in Trucking" in *The American Economic Review*. vol. 93. no. 4.
- Kaplan, Harold. 1989. *Policy and Rationality: The Regulation of Canadian Trucking*. Toronto: University of Toronto Press.
- Karlin, Jennifer N. and Jeffrey K. Liker. 2005. "Just-in-Time and Trucking Logistics: The Lean Learning Enterprise" in Dale Belman and Chelsea White (eds.). *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Karolevitz, Robert F. 1966. *This Was Trucking: A Pictorial History of the First Quarter Century of the Trucking Industry*. Seattle: Superior Publishing Company.
- Langley. 2005. "Logistics Service Providers" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Latour, Bruno
1987. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge: Harvard University Press.
1988. "The Sociology of a Door Closer: Mixing Humans and Non-Humans Together" in *Social Problems*. vol. 35, no. 3.

1991. "Technology is Society Made Durable" in John Law (ed.). *A Sociology of Monsters: Essays on Power, Technology and Domination*. New York: Routledge.
1993. "An Interview With Bruno Latour" in T. Hugh Crawford (int.). *Configurations*. vol. 1, no. 2.
1996. *Aramis, or, the Love of Technology*. Cambridge: Harvard University Press.
2005. *Reassembling the Social*. New York: Oxford University Press
2007. "Can We Get Our Materialism Please?" in *Isis*. vol. 98.

Law, John

- 1991a. "Power, Discretion and Society" in John Law (ed.). *A Sociology of Monsters: Essays on Power, Technology and Domination*. New York: Routledge.
- 1991b. (ed.). *A Sociology of Monsters: Essays on Power, Technology and Domination*. New York: Routledge.
1999. "After ANT: Complexity, Naming and Topology" in John Law and John Hassard (eds.). *Actor Network Theory and After*. Oxford: Blackwell Publishers.

Law, John and John Hassard (eds.). 1999. *Actor Network Theory and After*. Oxford: Blackwell Publishers.

Lay, M.G. 1986. "History of Roads" in *Handbook of Road Technology: Planning and Pavements*. New York: Gordon and Breach Science Publishers.

Levinson, Marc. 2006. *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*. Princeton: Princeton University Press.

Lowe, Graham S. 2000. *The Quality of Work: A People Centred Agenda*. Don Mills: Oxford University Press

Mader, Daniel. 2000. *Heavy Traffic: Deregulation, Trade and Transformation in North American Trucking*. Vancouver: UBC Press.

McKeen, Wendy. 2007. "The National Children's Agenda: A Neoliberal Wolf in Lamb's Clothing" in *Studies in Political Economy*. vol. 80.

McMullen, B. Starr. 2005. "The Evolution of the U.S. Motor Carrier Industry" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.

- Miller, Peter and Nikolas Rose. 1992. "Political Power Beyond the State: Problematics of Government" in *The British Journal of Sociology*. vol. 43, no. 2.
- Morganelli, Adrianna. 2007. *Trucks: Pickups to Big Rigs*. St. Catharines: Crabtree Publishing.
- Nagarajan, Anuradha et al. 2005. "Technology in Trucking" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Noble, David F. 1995. *Progress Without People: New Technology, Unemployment, and the Message of Resistance*. Toronto: Between the Lines.
- Ong, Aihwa. 2006. *Neoliberalism as Exception: Mutations in Citizenship and Sovereignty*. Durham: Duke University Press.
- Peoples, James. 2005. "Industry Performance Following Reformation of Economic and Social Regulation in the Trucking Industry" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.
- Rabinow, Paul. 1984. "Introduction" in *The Foucault Reader*. New York: Pantheon Books.
- Rifkin, Jeremy. 2004. *The End of Work: The Decline of the Global Labour Force and the Dawn of the Post-Market Era*. New York: Tarcher/Putnam
- Rose, Nikolas. 1999. *Powers of Freedom: Reframing Political Thought*. Cambridge: Cambridge University Press.
- Shalla, Vivian. 2007. "Shifting Temporalities: Economic Restructuring and the Politics of Working Time" in Vivian Shalla and Wallace Clement (eds.) *Work in Tumultuous Times: Critical Perspectives*. McGill Queens University Press.
- Statistics Canada. 2008. "Census Table: National Occupational Classification for Statistics 2006, Sex and Selected Demographic, Cultural, Labour Force, Educational and Income Characteristics for the Population 15 Years and Over of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations". Catalogue No. 97-564-X2006005.
- Steger, Manfred B. and Ravi K. Roy. *Neoliberalism: A Very Short Introduction*. New York: Oxford University Press.
- Swan, Peter F. and Stephen V. Burks. 2005. "Less-Than-Truckload Motor Carriers: A Story of Diversity and Change" in Dale Belman and Chelsea White III (eds.) *Trucking in the Age of Information*. Burlington VT: Ashgate Publishing.

- Thrift, Nigel. 2007. "Overcome by Space: Reworking Foucault" in Jeremy W. Crampton and Stuart Eldon (eds.). *Space, Knowledge and Power: Foucault and Geography*. Burlington: Ashgate Publishing Company.
- Veyne, Paul. 1997. "Foucault Revolutionizes History" in Arnold Ira Davidson (ed.). *Foucault and His Interlocutors*. Chicago: Chicago University Press.
- Woolgar, Steve. 1991. "Configuring the User: The Case of Usability Trials" in John Law (ed.). *A Sociology of Monsters: Essays on Power, Technology and Domination*. New York: Routledge.