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MARKETING IN AN AUTOMOBILE DEPENDENT SOCIETY: AN ANALYSIS OF CONSUMER-ORIENTED, INDUSTRY-PRODUCED ADVERTISING MATERIAL

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MARKETING IN AN AUTOMOBILE DEPENDENT SOCIETY
AN ANALYSIS OF CONSUMER-ORIENTED,
INDUSTRY-PRODUCED ADVERTISING MATERIAL

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by
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The vast material displacements the machine has made in our physical environment are perhaps in the long run less important than its spiritual contributions to our culture.

~Lewis Mumford
"The Drama of the Machines" in *Scribner's Magazine* (August 1930)

Abstract

Despite the best intentions of public policy to cure societal ills, for the individual American consumer, the solution to the problem of automobile dependence is simple: buy an automobile. Consumers are alleviating societal pressure of *not* having a car rather than focusing on the negative impacts of vehicle usage after the purchase. Marketing and advertising play an important role in portraying how the public views transportation. Marketing reinforces automobile dependence and automobility by creating images and messages that say the norm of American life requires an automobile; therefore, marketing creates, controls, and reinforces values within the automobile consumer culture. Addressing automobile marketing as a part of transportation discourse is applied and applicable to a broader population, which can potentially shift the approach to automobile dependence and automobility. It offers a new approach that can expand the way planners approach automobile dependency.

The objective of this research was to identify a relationship between automobility as a cultural norm and the ideology of marketed images of private vehicles. The two goals this study achieved were:

- to characterize the message and ideology of vehicle marketing to inform a portion of the American mobility discourse and

- to evaluate how the differences in the discourse of vehicle types interact with American values.

This study examined automobile manufacturers' marketing materials used to advertise vehicles of two distinct fuel-efficiency categories: passenger vehicles and light-duty trucks. A content analysis of marketing materials showed the dominant ideologies in these advertisements, such as land-use settings and values attributed to specific vehicles, while the theoretical lens of critical discourse analysis investigated the underlying power and ideology of the advertising

media (Fairclough, 1989, 1995). The study found marketing has created specific links between vehicle types and land use and a connection and conflict with specific vehicles and nature; passenger vehicles were removed from rural landscapes, and messages presented to consumers conflicted with official designations in the federal Corporate Average Fuel Economy (CAFE) system.

Planners often view education as the means of convincing the public to support initiatives that reduce negative impacts of human activity; however, automobile marketing inundates the consumer public with messages of the automobile as a preferred travel mode serving as a critical part of American life. As a result, vehicle marketing contributes to the automobile-dependence discourse in a significant way that requires attention.

Dedication

I dedicate this work to my family and friends.

To Amy who spent many nights fretting away wondering if I would ever finish and even more nights hearing me talk about cars, methods, and what distracted me from writing that day. Without you, I would not be here doing this and I would have likely starved. You supported me not because you had to, but simply because you could. "I am a million different people from one day to the next" and you have loved each and one. Thank you.

To my mother and father with whom I spent endless time explaining the process... this is "the book." You pushed me to never give up and see what happened? I ran out of space.

To my brother, for whatever. I am always jealous of your accomplishments.

To my in-laws, who pushed me more than anyone.

To Georgia, who kept Amy sane and me only slightly distracted.

To my friends and fellow Transposkunks who supported my lunacy during this process and forced me either into or out of my academic bubble (especially during the comprehensive exams). Thank you Marshall, Nick, Scott, Eliza, Hunter, Fred, Tamara, Jason and David.

Finally, to my grandmother, Ma "B".

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Dr. Anne Dunning has given me a voice. She has been my personal champion through my entire graduate education, and I would likely not be even close to this academic level without her support. She has supported my quirks, pushed my reluctances, and has made me a better researcher and a better person. She even overlooked the fact that I am a Gemini.

Dr. Cliff Ellis has given me direction. He has provided me balance and endless patience that I could not be without. He has provided the direction (and super-human administrative agility) in which I needed to succeed.

Dr. Barry Nocks has given me focus. His insight and guidance has shown me where I should go. He has shown me that I must not only know my subject, but I must understand it. He has focused my work and made my goals and objectives clearer.

Dr. Michael Meyer has given me perspective. Even before my dissertation, he listened to my path and gave guidance. I might still refuse a handshake after his worldwide tours, but I am always willing to take a road trip just to speak with him.

Finally, I must thank all of my coders and past teachers. I know you will never look at a car brochure the same way again... and for that, I apologize.

Contents

List of Figures

List of Tables

Chapter One: Introduction

Numerous studies have identified American and developed nations' dependence on automobiles (Newman and Kenworthy 1989, 1999, 2006; Featherstone, 2004; Urry, 2004; Lucas, 2008). For the American consumer, the solution to the problem of automobile dependence is simple: buy an automobile. Like a drug addict going for a quick fix, it is a short-term solution but it is effective for the user.

The automobile addiction of individual Americans aggregates into significant public problems such as greenhouse-gas emissions and congestion; therefore, public policy has considered methods for addressing automobile addiction. Land use and the physical form of development have received substantial attention for creating walkable communities and transit-oriented development (Zhang, 2006). These methods might prove effective in some urban environments; however, changing the physical environment or severely restricting automobile use either from mandates or fuel pricing might cause a *cold turkey* reaction and heavy resistance from the American automobile-dependent population. While some areas of the nation, particularly those where other modes are more competitive, might be more capable to of going cold turkey, many individuals and places cannot.

Another solution to address addiction is change the *fix* so that the craving is satisfied but the new *fix* is less destructive than the original addictive element. For example, the nicotine patch supplies nicotine for the user, but the practice and effects of smoking are addressed. Current American automobile dependency typically fixates on large fuel-inefficient vehicles where capacity is valued over efficiency; however, if America changes how it engages its dependence, the addiction can change. Like the nicotine patch, there are less destructive practices within

automobile dependency that can minimize and change how Americans move in their auto-oriented physical environment.

When and where Americans fall victim to more severe cases of automobile dependency, the solution is to get drivers *on the patch.* Instead of taking away the *fix* of the need to drive, the fix can be satisfied with a form that creates less negative impact. Instead of fuel-inefficient capacity-oriented vehicles, the *patch* for American drivers might be small fuel-efficient vehicles that allow the autonomy of private vehicles with less extreme impacts from greenhouse-gas emissions, foreign-fuel dependence, and infrastructure costs. The dependency of the automobile exists, but the negative effects and practice are mitigated. From the *patched* state, other elements of automobile dependency can change, gradually facilitating and increasing the number of Americans who can go quit their dependency altogether.

Certain factors, such as sparse rural or suburban land use and cultural norms, can make cold turkey methods difficult and indicate where the patch might be most effective. Some questions must be answered first. What factors create and reinforce automobile dependence? What land use values and cultural norms influence how Americans approach their vehicle and environment? In addition, what message does vehicle marketing contribute to how American prefers to move? The majority of the research focuses on the message within vehicle marketing and how they relate to what is being regulated. Is regulation addressing the question/problem/addiction it is intended to regulate? Are we still striving to regulate fuel efficiency, or should Corporate Average Fuel Economy (CAFE) standards be replaced with an emissions-based regulation? How does the automobile-buying public see land use in relation to their purchasing decisions?

Given that the land use, transit service, and cultural values do not currently support a nationwide cold turkey approach to automobile addiction, smaller measures to patch the addiction need to be explored. The objectives of this research were:

- to characterize the message and ideology of vehicle marketing to inform a portion of the American mobility discourse

- evaluate how the differences in the discourse of vehicle types interact with American values

This report addresses these objectives with several methodological approaches. The following chapter provides background on government approaches to regulating the negative impacts of mass adoption of automobiles. The third chapter identifies the initial discrepancies of how vehicles types are portrayed differently in photographic marketing material and one example of how manufacturers do not necessarily market vehicles according to the intent of CAFE regulations. Chapter four discusses the methods for the study and chapter five reviews the results divided into three major segments. Chapter six discusses the ramifications of the findings and discusses the nature in which vehicle manufacturers communicate specific values to the consumer, how the consumer would potentially identify with the message, and how dependency is changes with fuel economy regulations and marketing.

Chapter Two: Literature

The Corporate Average Fuel Economy program or CAFE standards provides a recognizable and enforceable vehicle classification system. Central to addressing fuel economy demands, Administered by the National Highway Traffic Safety Administration of the United States Department of Transportation CAFE standards are central to addressing fuel economy demands and the program standards ensure the American vehicle fleet adheres to protecting

American mobility. However, due to a variety of causes, the American vehicle fleet has transformed since the advent of CAFE standards in 1975. Phenomena such as the widespread adoption of sport utility vehicles, record fuel prices, and global concern over carbon emissions have brought renewed attention to CAFE standards and their effectiveness. As a result, the CAFE vehicle classification system needs reconsideration, particularly when the details are examined.

What vehicle classification describes automobile vehicle with four doors, five or six custom-leather passenger seats, a premium eight-speaker stereo, dual-zone climate control, remote start, a LCD DVD entertainment system for backseat passengers, and the largest trunk of any vehicle? This vehicle also has a convertible open cargo area, and is photographed in front of a single family home with an identifiable family unit? Then add more images of this vehicle hauling a recreational boat or a camper to create a marketing campaign around the generous passenger amenities, safety, and capacity. Would this vehicle be a passenger vehicle or a light-duty truck? Even though this vehicle is marketed to serve family and passenger purposes, this vehicle can be classified as a light-duty truck according to current Corporate Average Fuel Economy (CAFE) standards. In any case, if a vehicle has only one attribute of a light-duty vehicle, such as the ability to tow in the example above, then it is classified as a light-duty vehicle.

The classification difference is critical to manufacturing cost because light-duty trucks do not have to meet the most stringent fuel economy regulation, which applies to passenger vehicles. Manufacturers are motivated to sell light-duty trucks to the driving public, and light-duty trucks sometimes primarily serve passenger vehicle purposes. As a result, the classifications are skewed, and carbon emission intentions are thwarted. In the case above, a question arises as

to whether this vehicle, with its high passenger capacity and creature comforts, is properly classified according to the intent and desired consequences as legislation involving fuel economy set out to achieve. This vehicle can perform in either role but its classification for serving passengers or cargo changes the cost and impact.

CAFE

The federal regulation most at issue in this case of automobile classification and consumerism is the Federal Automotive Fuel Economy Standards, also known as the Corporate Average Fuel Economy (CAFE). This interesting and controversial regulation was aimed at reducing the public's demand for gasoline and oil. Congress first enacted CAFE Standards in 1975 with the purpose of reducing energy consumption by increasing the fuel economy of cars and light trucks (National Highway Traffic Safety Administration, 2010); however, no one single agency has total authority of the CAFE process. Regulating CAFE is the responsibility of the National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) (NHTSA, 2010). NHTSA sets fuel economy standards for cars and light trucks sold in the United States, while EPA is responsible for calculating the average fuel economy for each manufacturer.

CAFE's ability to change gas and oil consumption has met with limited success. The standards have increased vehicle fuel economy and reduced overall fuel consumption (Greene 1997, p. 1); on the other hand, some economic arguments put forth that CAFE standards discriminate against American production, encourage people to drive more, use vehicles longer, increase crashes and congestion, increase pollution and emissions, and risk consumer injury (Kleit 2002, p. 20). Most of these concerns result from an increase in motorized transport, regardless of fuel efficiency policy. An automobile-dependent society will result in increased

driving, crashes, congestion, and pollution. Either perspective of CAFE standards is problematic mostly because the successes of CAFE have been limited and the negative repercussions are mostly indirect.

Researchers agree that two definite effects of CAFE standards exist. The first is that fuel efficiency has increased, but it is difficult to ascertain whether fuel efficiency would have increased as much if CAFE were not implemented. The second is that CAFE standards have changed the vehicle fleet.

Unfortunately, the effects of the efficiency standard are not always clear and direct. For instance, passenger vehicles and light-duty trucks have been increasing in their fuel efficiency since CAFE adoption; however, the efficiency of the vehicle fleet has been mostly stable without significant increases from the early 1980s to the late 2000s (Figure 1). In fact, fuel efficiency declined from nearly 2 miles to the gallon from a high in 1987 to a low in 1999. Since 2007, fuel efficiency has increased, likely due to a consumer and governmental policy response to higher fuel costs that occurred during this same time.

While the CAFE fuel-efficiency objective has had periods of success and stagnation, the criticisms of CAFE standards suffer from different issues that include indirect effects. For instance, one criticism is that CAFE standards increased people's driving (Kleit, 2002, p. 20). This argument assumes people feel they are spending less money on fuel and making less impact on the ecosystem for each mile they drive; therefore, they can drive longer distances. This relationship might be weak at best when considering other factors such as land use, spatio-temporal-cultural norms (automobility), the economy, employment, and vehicle ownership-affecting vehicle miles traveled. In fact, yearly changes in vehicle miles traveled held a negative correlation ($r = -0.476$) with annual changes in fuel efficiency with data from 1978 to 2009, meaning that as fuel efficiency has increased, vehicle miles traveled have decreased (Figure 1). This relationship is not causal, but rather it is likely a spurious relationship with fuel prices: rising fuel prices likely cause people to buy more fuel-efficient vehicles and to drive less.
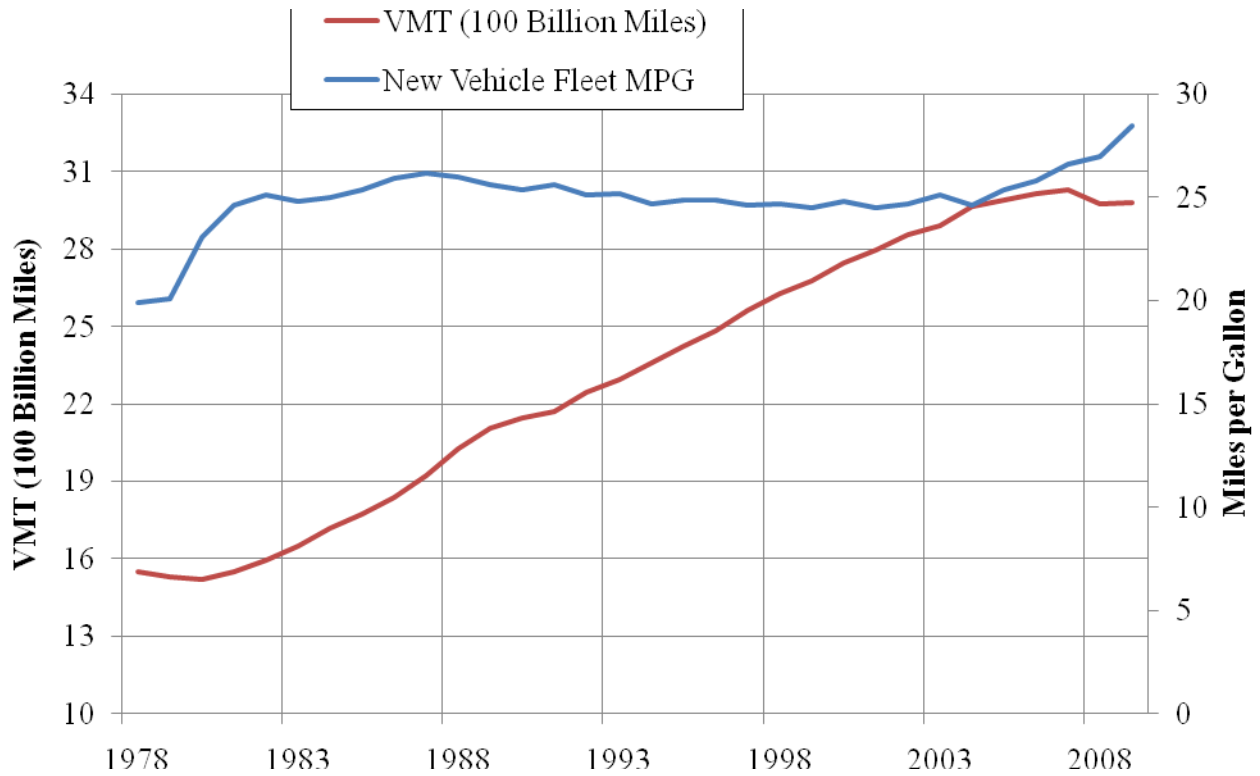
Figure 2: Vehicles Miles Traveled (VMT) and New Vehicle Fleet Miles per Gallon
Source: Federal Highway Administration, (2009).

While vehicle miles traveled have increased since the adoption of CAFE standards, this increase could be the continuation of a pre-existing upward trend. Vehicle miles traveled were already increasing before CAFE adoption. In 1971, vehicle miles traveled (VMT) increased 5.85 percent and in 1972, VMT increased by 6.98 percent (FHWA, 2010). Since the adoption of CAFE standards, only two years, 1976 and 1988, saw an increase of VMT above five percent with the average increase of VMT being only about 3.1 percent per year. Increases in fuel efficiency often followed a decrease in VMT. VMT only declined in four of the last 40 years (1970-2009). The years of declining VMT included 1974, 1979, 1980, and 2008; however, the years with the greatest increase in fuel efficiency were 1980, 1981, and 2009, which followed on the heels of VMT reductions. The introduction of CAFE standards was on the heels of the oil embargo that created decline in VMT in 1974. It is likely that the factors affecting vehicle miles

traveled, such as fuel price, fuel availability, and the economy are also affecting fuel efficiency of new vehicle fleets by changing the consumer preferences. Either the consumer buys a smaller vehicle due to the lower price or consumers demand greater fuel efficiency when fuel prices are too high to fuel an inefficient vehicle. It is also likely that reduction in vehicle miles traveled is a short-term solution to stay within budget for fuel spending, but the longer-term solution is to drive the original number of miles in a more fuel-efficient vehicle. People have bought fuel-efficient vehicles when they have come to accept that fuel prices have increased for the long term, so technology must change if travel behavior is to be maintained.

Factors affecting vehicle miles traveled, such as fuel price, fuel availability, and the economy are likely also affecting fuel efficiency of new vehicle fleets by changing consumer preferences. Either the consumer buys a smaller vehicle due to the lower price or consumers demand greater fuel efficiency when fuel prices are too high to fuel an inefficient vehicle.

During several years since CAFE standards have been enforced, fuel efficiency declined by 2 miles to the gallon from a high of 26.2 in 1987 to a low of 24.5 in 1999 (DOT, 2009). Notably, that high of 26.2 occurred 13 years after the adoption of CAFE (DOT, 2009). Since 2007, fuel efficiency has increased, likely due to a consumer and governmental policy response to higher fuel costs that occurred during this same time. For 19 years from 1986 to 2004, passenger-vehicle fuel efficiency remained mostly constant hovering between 27.5 miles to the gallon and 29.5 miles to the gallon (DOT, 2009); however, the total fleet fuel efficiency declined slightly, dropping from 26.2 to 24.6 miles per gallon (DOT, 2009). During this same time, the percent of light-duty trucks as a part of the total fleet increase from 29 percent to 53 percent. From 1988 to 2008, the change in total fleet fuel efficiency for new vehicles showed a negative correlation with the change in light-duty truck sales ($r = -0.300$), meaning that fuel economy

decreased as light-duty truck sales increased. The decrease in fuel efficiency from 1986 to 2004 corresponded directly with the increase in light-duty trucks as a part of the total vehicle fleet.

This same 18-year period from 1986 to 2004 saw a drastic shift in the types of vehicles produced and consumed (Figure 3). Passenger car sales declined from just over 11 million in 1986 to 7.3 million in 2004 and light-duty truck sales increased from 4.4 million to 8.3 million; total sales in 1986 were nearly identical with 2004 sales, 15.4 million and 15.7 million respectively (DOT, 2009). This increase in sales could have been the result of the CAFE standards and a change in the way consumers perceived their choice of vehicles. For example, light-duty trucks have been adopted as general-use personal passenger vehicles. It is possible that the CAFE standards changed the vehicle fleet within the United States, but it also is likely that advertising contributed to the way consumers approach purchasing vehicles.
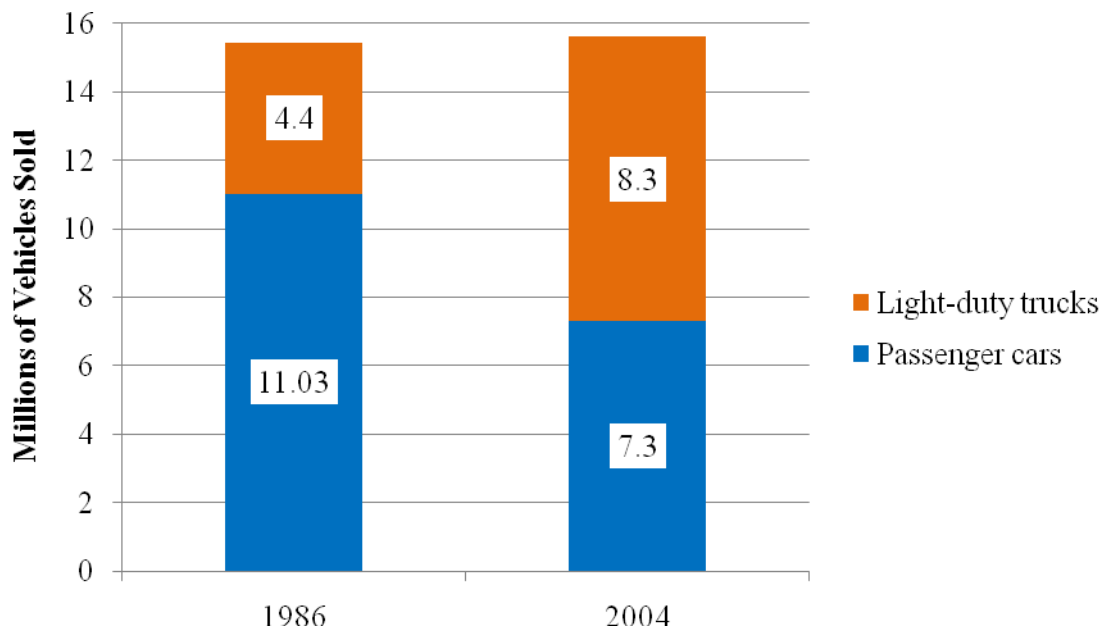
Figure 3. Vehicle productions and sales shifted significantly toward light-duty trucks.

Calculations of Corporate Average Fuel Economy

The Corporate Average Fuel Economy is the average fuel efficiency for automobile manufactures based the total number of sales of each vehicle produced. (National Highway Traffic Safety Administration, 2010) The corporate average is just that, a corporate average weighted on vehicle sales. CAFE standards are calculated using harmonic averaging (Kleit, 2002, p. 3). For example, if a vehicle manufacture "X motors" sells two vehicles and vehicle A achieves 30 miles per gallon (mpg) and vehicle B gets 10 miles per gallon, the corporate fuel economy is dependent on the number of vehicles A and B that the manufacturer sells. If the manufacturer sells 500 of vehicle A and 100 of vehicle B, the efficiency is determined by multiplying the number of model of vehicles sold with the model's fuel efficiency, summing up all the vehicle's weighted fuel efficiency, and then dividing the sum by the total number of vehicles sold. In this case, the equation to determine the corporate average will be:

$$\frac{(Number\ of\ Vehicle\ A\ sold \times Vehicle\ A's\ MPG) + (Number\ of\ Vehicle\ B\ sold \times Vehicle\ B's\ MPG)}{Total\ Number\ of\ Vehicles\ Sold}$$

$$\frac{(500 \times 30) + (100 \times 10)}{600} = 26.67 MPG$$

Now, if another manufacture "Y motors" produced two similar vehicles that attained 30 and 10 miles to the gallon respectively, but sold different amounts of the vehicles then the corporate average would be different. Let us say that that "Y motors" sold only 100 of vehicle A and 500 of vehicle B. The equation would result in this:

$$\frac{(100 \times 30) + (500 \times 10)}{600} = 13.33 MPG$$

The means in which to attain the corporate fuel economy appear easy enough. However there are exemptions to the corporate averages. Vehicles with a gross vehicle weight of 8,500 lbs. are

11

excluded from the calculations (NHTSA). Finally, the most significant exception for fuel-efficient standards is the divisions between passenger vehicles and light-duty trucks. Passenger vehicle standards are set to be the "maximum feasible level". The maximum feasible level is not determined by a specific equation, but it is determined nonetheless. The light-duty truck CAFE standard is quite different.

While the passenger vehicle standard has been relatively constant, light-duty truck standards have undergone several changes in the past 5 to 10 years. The fuel economy standards for light trucks have been adjusted to include a physical means in which to determine the fuel efficiency. In 2002 the Committee on the Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards recommended that vehicle fuel efficiency standards should be based upon vehicle attributes such as vehicle weight (National Academy of Sciences, 2002, p. 6). Following NAS recommendation and the Energy Policy Act of 2005, fuel economy standards underwent significant revisions (National Highway Traffic Safety Administration, 2006, p. i). These revisions were mostly targeted at the light-duty truck market segment, since this classification had been virtually nonexistent and ignored during the previous four decades.

When the Corporate Average Fuel Economy standards were created as a response to the 1973-1974 oil embargo, passenger vehicles accounted for about 90 percent of vehicles sold and light-duty trucks were only 10 percent (National Highway Traffic Safety Administration, 2006, p. 1; Federal Highway Administration, 2009, p. 3). The goal of the CAFE standards was to double the fuel efficiency of passenger vehicles (National Highway Traffic Safety Administration, 2006, p. 1). Initially, the effects of CAFE standards significantly increased fuel efficiency. Passenger vehicle fuel efficiency rose from 19.9 mile per gallon in 1978 to 28.8 miles per gallon in 1988 (Federal Highway Administration, 2009, p. 3). The total fleet fuel efficiency,

including both passenger vehicles and light-duty trucks rose from 19.9 in 1978 to 26 miles per gallon in 1988 (p. 3). In the early 1980s, the adoption of light-duty trucks, particularly Sport Utility Vehicles, for daily use, meant that the fuel efficiency of passenger vehicles quickly outpaced the fuel efficiency of the total vehicle fleet.

The consequence of adopting light-duty trucks as passenger vehicles has resulted in light-duty trucks equaling the number of sales of passenger vehicles (Summary of Fuel Economy Performance 2009, Department of Transportation). From 2000 to 2008, approximately 140 million new vehicles were sold and of those about 71 million were classified as passenger vehicles and 69 million were light trucks. In fact, light-duty trucks outsold passenger vehicles in 2004 and 2005. Rising fuel costs likely curbed light-duty truck sales, keeping them just below passenger vehicles in total sales since 2006. However, high fuel cost did not stop consumers from purchasing light-duty trucks. The high fuel prices only adjusted the percentage of light-duty truck slightly, about 4 percentage points, and light-duty truck sales remained with 200,000 vehicles of their passenger vehicle sales.

The more astonishing trend is the change in vehicles sales since the beginning of the Corporate Average Fuel Economy (CAFE). Standards were introduced and records based on vehicle type were kept. Since 1979, the number of passenger vehicle sold has decreased by roughly one-third. On the other hand, light-duty trucks have increased in sales by 589 percent. In 1979, light-duty trucks only accounted for 10 percent of new vehicle sales. While new vehicles sales peaked in 2000 with approximately 16.5 million, passenger vehicles never exceeded the 1979 vehicle sales and experienced an overall decline within the thirty years of sales. Therefore, the increase in the total vehicle sales, which included the decline in sales among passenger vehicle sales, is attributed to light-duty truck sales. A major consequence of the increased

number of light trucks sold was that after 1987 total fleet fuel efficiency declined. Only recently (since 2007), has fuel efficiency increase above the 1987 peak.

The problem with increasing numbers of light-duty trucks and the lower fuel efficiency requirements is that these vehicles are serving as a replacement for consumers for passenger vehicles. In addition, Americans are driving over 3 trillion (3,014,116,000,000) vehicle miles on U.S. highways (Bureau of Transportation Statistics, 2009, p. 69). This amount the equivalent of driving from the sun to the dwarf planet of Pluto 413 times (NASA, 2009). This use of the automobile dwarfs the 4.7 billion vehicle miles by transit vehicles. As a result of this impact, the strong reliance on automobiles for U.S. mobility is identified as an "automobile dependency".

From this consumer perspective, CAFE standards have changed how Americans use vehicles within an automobile dependent framework. The less stringent regulations for light-duty vehicles have allowed manufacturers a loophole to produce less fuel efficient vehicles as a replacement to traditional passenger vehicles. In order to combat this loophole, CAFE standards have been undergoing significant revision and change, but the new standards do not account for how the consumer uses the vehicle and how manufactures portray the vehicle to consumers. The current standards still separate passenger vehicles and light-duty trucks. However, the marketing material developed by vehicle manufacturers blurs the lines between these two Federal classifications. As introduced earlier, a consumer might purchase a light-duty truck for its passenger capacity and not its towing capacity.

CAFE and Vehicle Shift

Prior to CAFE standards, large standard family sedans or station wagons were common passenger vehicles. Passenger vehicles remained dominant with 90 percent of the vehicle fleet in the early years of CAFE standards, but a common solution for passenger vehicles to achieve

greater fuel efficiency and meet CAFE standards was down-weighting, down-sizing, and weight reduction (National Academy of Sciences, p. 3). "Light trucks (pickup trucks, sport-utility vehicles, and minivans) were placed in a different CAFE "pool" than cars [w]hen CAFE standards were originally passed [because] these vehicles represented a small fraction of the relevant market" (Kleit, 2002, p. 2). The average weight of domestic of a passenger vehicle declined from 4,380 lb. to a bit under 3,500 lb by 2000 (NAS, p. 15). In other words, CAFE standards indirectly made passenger vehicles smaller. On the other hand, light-duty trucks had less restrictive fuel economy standards. Less restrictive standards allowed for light-duty trucks to maintain a larger size. Unlike the passenger vehicles, light-duty truck increased their curb weight a few hundred pounds while under CAFE regulation (p. 15). Sport utility vehicles (SUVs), passenger vans (such as mini-vans), and even four-door 5+ pickup trucks began to substitute for traditional passenger vehicles as daily use commuting vehicles. It is easy to understand why these vehicles are a popular solution for consumers wanting large vehicles. A full-sized sedan, classified as a passenger vehicle, had to meet higher fuel economy standards that in turn resulted in a smaller vehicle with a smaller engine. An SUV did not have to meet the same fuel economy standards. It could retain a larger size with a larger engine. It could also be marketed as a recreational vehicle with rugged utilitarian features. After all, it is a "sport utility" vehicle; it says recreation and utility within its name.

Downsizing passenger vehicles increased safety concerns in crashes. After all, the National Highway Traffic Safety Administration oversees the responsibility CAFE regulation. The primary goal of NHTSA is to save lives (National Highway Traffic Safety Administration, 2010). Furthermore, safety is the most important factor when buying a new car according to Consumer Reports' 2010 Car Brand Survey. Safety is followed by quality, value, and

performance. As what Kurani and Turrentine (2002) identify, "people do not consider fuel efficiency to be an environmental attribute" and is not normally a significant issue when purchasing a vehicle (p. 13, p. 47). Once again the different CAFE regulations affect vehicle choice. Passenger vehicles, with the perception of being smaller, less safe, with less powerful are going to be viewed as being a lesser value than larger light-duty trucks with greater engine size, greater vehicle size (a safety perception issue), and more interior space. The different CAFE fuel efficiency standards have created this uneven market condition that favors the light-duty truck. Despite the advantage of light-duty trucks provided by the effects of CAFE standards, there are recent changes to the CAFE designation and classification. Light-duty truck fuel efficiency has increase since 2005 (Federal Highway Administration, 2009, p. 3). Still, light-duty trucks do not meet the same standards as passenger vehicles and their mass adoption by consumers has reduced the potential success of heightened fuel economy regulation.

Current Standards

Light-duty vehicles, which include bother passenger vehicles and light-duty trucks, account for about 60 percent of transportation oil use, which means that they alone account for about 40 percent of all U.S. oil consumption (Environmental Protection Agency, Department of Transportation, 2010). As a result, the current standards look to maximum efficiency in the wake of higher petroleum prices. The current CAFE standards include requirements set forth the Energy Independence and Security Act (EISA). The Energy Independence and Security Act amended Energy Policy and Conservation Act (EPCA) by mandating that the model year 2011–2020 CAFE standards be set sufficiently high to ensure that the industry-wide average of all new passenger cars and light trucks, combined, is not less than 35 miles per gallon by model year 2020 (Dept. of Transportation, 2009). This requirement sets the CAFE requirement of the

maximum feasible level in each model year. However, the Energy Independence and Security

Act allowed for the NHTSA to add additional requirement to establish the standards of 35 mpg

goal earlier than the designated 2020.

The continued high fuel prices since 2008 have contributed to a re-assessment of fuel

economy standards. In addition, carbon dioxide as also crept into the discussion. As a result, the

National Fuel Economy Policy combines both climate change policy with the goal of reducing

foreign oil consumption (EPA & NHTSA, 2010, p. 25324). As a result, new standards apply to

model year 2012 through 2016 (pg. 25324). Higher standards are currently being reviewed for

the 2017-2025 model years with a goal of 54.5 being the target by 2025 (NHTSA, July, 29,

2011). The other major change for fuel economy standards was the re-introduction of foot-

printing.

Vehicle Definitions

At the heart of CAFE standards is vehicle classification. How a vehicle is classified

determines how a fuel economy is averaged. There are two main classifications, 1) passenger

vehicles and 2) light-duty trucks. Passenger vehicles are classified as "any 4-wheel vehicle not

designed for off-road use that is manufactured primarily for use in transporting 10 people or

less" (NHTSA, 2010). This definition for a passenger vehicle is rather broad and the definition is

targeting a "primary use" such as transporting passengers. For comparison, the Federal Highway

Administration set the definition of a passenger vehicle as: "all sedans, coupes, and station

wagons manufactured primarily for the purpose of carrying passengers and including those

passenger cars pulling recreational or other light trailers." The definition of light-duty trucks is

not as simple. While the passenger vehicle definition has remained constant throughout CAFE

implementation, the light-duty classification has gone under considerable change. The NHTSA classifies a light-duty truck differently;

> "a 4-wheel vehicle which is designed for off-road operation (has 4-wheel drive or is more than 6,000 lbs. GVWR and has physical features consistent with those of a truck); or which is designed to perform at least one of the following functions: (1) transport more than 10 people; (2) provide temporary living quarters; (3) transport property in an open bed; (4) permit greater cargo-carrying capacity than passenger-carrying volume; or (5) can be converted to an open bed vehicle by removal of rear seats to form a flat continuous floor with the use of simple tools" (http://www.nhtsa.gov/cars/rules/cafe/overview.htm)

Whereas the passenger vehicle classification is ambiguous and primarily based on intended use, the truck classification is very specific and is based on physical characteristics, rather than intended use. As a result, there is a potential problem when a vehicle qualifies for a light-duty truck classification but the end-users' intent is to use it as a passenger vehicle. The passenger vehicle classification, with ambiguous, non-exclusionary definition was supposed to be a catch all, but rather the light-duty truck has become a haven for vehicles used as passenger vehicles, such as many sport utility vehicles (SUVs), avoiding fuel economy standards. The classification of the light-duty truck class needs further dissection.

The classification of light-duty trucks is based on physical characteristics; however, the first classification is based on potential use. In the quote above, the first characteristic is for off-road use, in particular, four-wheel drive. While four-wheel drive requires greater energy, and thus more fuel to operate than a comparable two-wheel drive vehicle, the presence of four-wheel drive should not necessarily qualify a vehicle as a light-duty truck. However, a majority of the

light-duty is not four-wheel-drive vehicles and there are several passenger vehicles that are four-wheel-drive. Another potential attribute is the greater cargo capacity than passenger carrying volume. However, the classification does not distinguish between cargo space that includes transitional space where passenger seating can be folded down or removed to allow additional cargo space except for the open bed attribute. The distinction does not account for variability in passenger volume and assumes that any dual-use space is a light-duty use. A passenger space is not a set unit and often does not account for the space of the seat needed to make a space usable for a passenger.   Currently the light-duty truck classification is an exempt classification in order to allow certain vehicles and their use to avoid fuel economy regulation that could interfere with their intended use. However, the light-duty class is inclusionary to a wide range of modern vehicles rather than an exclusionary classification.

There are two potential solutions for the differences in the fuel-efficiency gap between light-duty trucks and passenger vehicles. One solution is to redefine the definition so it corresponds more closely to the original distinction between the two classes: passenger vehicles and work/cargo vehicles (NAS, 2002, p. 87). A second solution is to examine the marketing materials of manufacturers. Manufacturers created more desirable trucks with more carlike features: quiet, luxurious interiors with leather upholstery, top-of-the-line audio systems, extra rows of seats, and extra doors (National Academy of Science, 2002, p. 18). Rather than looking at the vehicle for its classification, the classification of a vehicle should be based on how the manufacturers present the vehicle to consumers. If a vehicle is presented to a consumer as a work/cargo truck, then there a viable argument that this vehicle's intended use and the buyer's intended use is likely the same. In other words, use as a work vehicle, and it might apply for different fuel economy standards. If the vehicle is presented with more carlike features: quiet,

luxurious interiors with leather upholstery, top-of-the-line audio systems, extra rows of seats, and extra doors such as the National Academy has described, then the use of the vehicle and its classification has shifted to a passenger vehicle.

Footprinting

Starting in model year 2011, fuel economy standards are expressed as mathematical functions depending on vehicle footprint (EPA & NHTSA, pg. 25330). For fuel economy purposes, the "footprint" is "determined by multiplying the vehicle's wheelbase by the vehicle's average track width" (pg. 25330). The footprint is then accounted for based on the harmonic mean of vehicles sales as noted earlier. Thus vehicles with a larger footprint are held to a lower (less efficient) fuel economy standard. However, the two-tiered passenger vehicle/light-duty truck division remains. Thus a passenger vehicle with the same size footprint of a light-duty truck must conform to more rigorous fuel economy standards than the light-duty truck counterpart. Thus if a vehicle with a footprint of 40 square feet is classified as a passenger vehicle the fuel economy target is 41.1MPG for the 2016 model year while one labeled as a light-duty truck has a target of just under 35 MPG. Therefore, a vehicle like the Honda Fit must meet more strenuous fuel economy standards than a vehicle like the Nissan Juke despite similar footprints of about 41square feet.

On the next page, the footprint application is represented in a graph produced by the EPA and NHTSA. Please note that the footprint method creates a greater overall and percentage increase for passenger vehicles than for light-duty trucks. The increase between small passenger vehicles and larger passenger vehicles is much greater than those of the light-duty counter parts. As a result, footprinting might exacerbate inequalities in vehicle type classification. While it holds smaller light-duty trucks more accountable for higher fuel economy, it also places a higher

burden for passenger cars. The higher burden for passenger-oriented vehicles was noted by Volkswagen as it was not one of the vehicle manufacturers that agreed to the revised method. Volkswagen stated in 2011 after the revised CAFE regulations were released,

> "[revised CAFE standards] places an unfairly high burden on passenger cars, while allowing special compliance flexibility for heavier light trucks. Passenger cars would be required to achieve 5% annual improvements, and light trucks 3.5% annual improvements. The largest trucks carry almost no burden for the 2017-2020 timeframe, and are granted numerous ways to mathematically meet targets in the outlying years without significant real-world gains"   (Volkswagen Group of North America, July 29, 2011).

Not only is the gap between regulations of light-duty trucks and passengers widening, but the regulations are encouraging the production of less efficient vehicles.
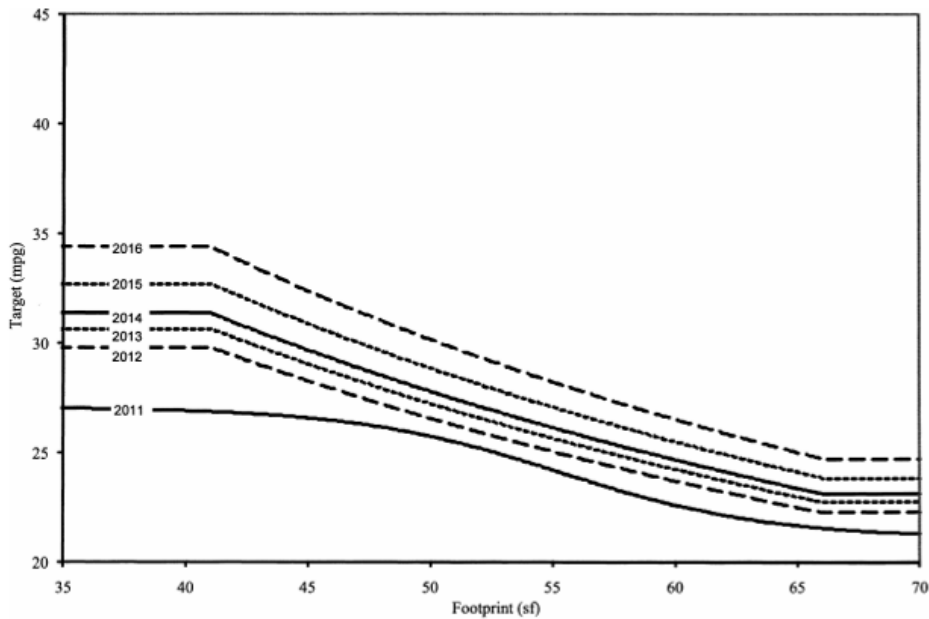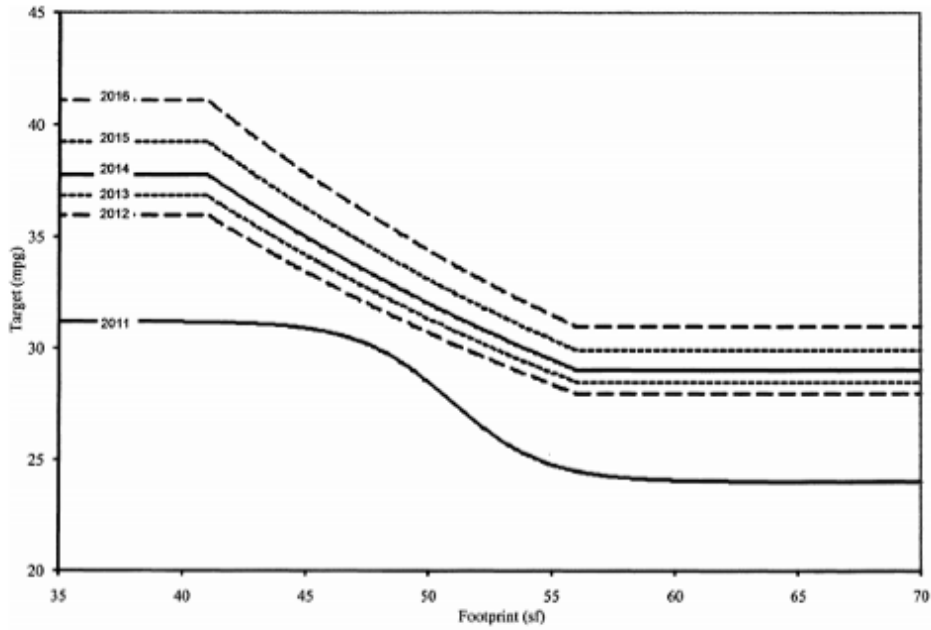
Source: U.S. Environmental Protection Agency, Department of Transportation, & National Highway Traffic Safety Administration. (2010) *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule.* Washington, DC: Office of Rulemaking. Federal Register / Vol. 75, No. 88.

Automobile Dependency

CAFE standards are an integral aspect of automobile dependency. If modal switches are not easily made, then the means of reducing some negative impact of automobile use is dependent on how efficient the vehicles are in the system. Fuel economy standards mitigate some issues that automobile dependency standard might have an on the American commuter, automobile use, and vehicle purchasing. Automobile dependency and automobility dictates that individuals will use vehicles regardless of government regulation about efficiency. Individuals will use automobiles if they have poor fuel efficiency or good fuel efficiency although there might be a slight difference of how the vehicle is used.

Automobile dependency and land use share a strong relationship within planning literature. The term was introduced within the planning discipline by Newman and Kenworthy (1989), and the concept has now ventured into many other disciplines. As a result, automobile dependency shares many various sub-definitions and a blend of terminologies that focus on a wide range of perspectives about the automobile as a physically and socially dominant mode of transportation. Initially, automobile dependency was a joint land use/transportation issue reflecting the role and expertise of the planning discipline. However, concepts such as automobility, automobile addictions, automobile reliance, and automobile culture have appeared in many disciplines including sociology, history, geography, and other social sciences. The expansion of the research interest into automobile dependency, or at least the phenomenon of the automobile as the single dominant mode, has created various approaches to the subject.

The main divide between these approaches lies between the physical and social approaches. On one side of the literature, the role of the physical environment is the primary factor and solution to the automobile dependency debate as described by Newman and Kenworthy (1989, 2006), Newman et al. (1995), Kenworthy et al. (1999), and Zhang (2006).

23

The other aspect of the automobile dependency debate includes the social repercussions and cultural perceptions related to automobile as debated in as Urry (2000), Featherstone (2004), and Lucas (2009). Each of these approaches within the literature brings forth different base assumptions when identifying and explaining the relationship of how the automobile dominates the respected physical, social, and political arena.

In the initial framework by Newman and Kenworthy (1989), automobile dependency emerged from the physical land use and population density discourse. As a result, there was a natural progression for the physical land use disciplines to seek a solution to the phenomenon they identified. Later works by Newman and Kenworthy (2006), as well as other contributing authors, focused on changing the design and management of the physical environment in order to better conform to the needs of the automobile. As a result, the common solutions are urban design and the restructuring of land use regulations. Newman and Kenworthy (2006) state, "The redevelopment of urban areas can facilitate the reduction of automobile dependence" (p. 48). Newman and Kenworthy go as far as stating that non-land use terminology, including cultural factors, are essentially derivative of the intensity of activity that they propose (p. 42). However, this concept that the cultural factors are derivative of an intensity of activity, as defined by Newman and Kenworthy, might be slightly misleading. Activity intensity and intensity of activity are used interchangeably by Newman and Kenworthy as measurement of population density, jobs density, or both per hectare within a loosely defined urban space (p. 37).

However, culture and socially constructed behavior are not causal resultants or dependant variables to the forms of urban density. They function vice versa. Cultural expectations and ideologies might even affect the population and job densities in an iterative feedback contrary to the assumption that activity intensity drive cultural factors. While both population and

24

employment density have an effect on transportation, cultural factors affect and are affected by many more variables that population and job density alone.

Zhang (2006) adds other factors and argues that there is increasing evidence between land use and travel behavior (p. 312). While Zhang stresses the importance of land use as a factor contributing to automobile dependency, he does not follow Newman and Kenworthy's (2006) claim that the relationship between automobile dependence and the intensity of land use "have been confirmed repeatedly" (p. 37). Rather Zhang maintains a link between land use and travel mode choice. Both Zhang (2006) and Newman and Kenworthy (2006) use land use and density as the primary driving factor behind automobile dependence; however, Zhang argues that the land use influences the individual's and the cultural choice behind transportation modes (p. 314). In addition, Zhang notes that if someone asks for the common U.S. perception for the reason to drive, the result would likely be "I have to" or "what else can I do" (311). Both of these anecdotal comments about the reason to drive do not suggest that land use is the determining factor. Either the common perception of the average driver is unaware of land use as a problem or the current low-density automobile-oriented land use is preferred within some cultural construct and is therefore not a problem or concern. Zhang notes these answers are an "excuse" for driving as well as representative of a lack of a viable option for another mode. This argument of a manufactured excuse as the result of a lack of choice can be seen in the example of a cul-de-sac subdivision that forces parents to drive their children rather than using a different mode (311). The outcome of this example provides a strong case to improve land use to address this particular case of automobile dependence, but there are other factors that are not addressed. Land use and automobile dependency do not share a direct causal relationship but are rather a convoluted relationship with other socially constructed values and variables.

Automobile dependence is connected not only to the individual but to social values and behavior. Lucas (2008) asserts "dependence on car based travel not only as individuals but as a society as a whole" (4). In this expanded understanding, automobile dependence is a socially constructed and enforced behavioral pattern, not a system individual choices of available mode options. The automobile is only a modern invention with modern constructs. Earlier research by Kline and Pinch (1996) identified the resistance of the automobile in the late nineteenth and early twentieth century. As they state, "When [the automobile] first appeared in the countryside… driven by city folk out for a spin, they often met a hostile reception" (p. 768). It took a period of time for the automobile to become an accepted mode and the supporting infrastructure to be constructed.

The automobile also had to achieve dominance over other modes of transportation. Urry's (2000) concept of automobility extends the domination of one mode over the other modes as a socially developed practice. Urry defines automobility as "a self-organizing autopoetic, nonlinear system that spreads world-wide, and includes cars, car-drivers, roads, petroleum supplies and many novel objects, technologies and signs" (p. 27). The supportive infrastructure has normally been attributed to automobile dependency; however, the dependency also influences the infrastructure. Here the automobile and the relating supportive institutions assume the dominant culture and discourses of what composes "the good life, what is necessary for an appropriate citizenship of mobility and which provides potent literary and artistic images and symbols" (p. 26). Automobility is the social and cultural extension of automobile dependency. Lucas (2008) also identifies automobility as a form of hyper-mobility persuasive within modern society coinciding with a culture of car dependency (p. 7). As a result, automobility and a cultural automobile dependency both attempt to describe the same social phenomenon of an

acknowledged spatial, physical, temporal, and social re-organization to accommodate the vehicle over time.

These social and cultural factors drive the public's perception towards auto-oriented and alternative transportation options, making automobile dependence more than a physical land use or infrastructure issue. Within the United States, the dominant transportation culture is the automobile culture. As Featherstone (2004) summarizes, "Cars have high visibility in the social landscape and cultural imagery over the last Century" (p. 1). As a result, the dominant culture sustains the major discourse of what the public expects, what is considered good and preferable, and what is necessary to live a given lifestyle (Urry, 2000, p. 26). Therefore, travel choice and perceived auto dependence is based within the society (Lucas, 2008, p. 4). For the public to change its discourse, there are must be a shift within the expectations and values. Currently, U.S. culture is in a state of automobile dependence and oriented values that normally hold the automobile as highly desirable as compared to transit and its low desirability (Guiver, 2007, p. 14).

Other sub-issues within the automobile dependent culture include a stronger emphasis on travel capacity than a concern for the environment or energy efficiency. Kurani and Turrentine (2002) identify that "people do not consider fuel efficiency to be an environmental attribute" (p. 47). Rather, fuel economy improves consumer satisfaction after vehicle purchases, but it has not traditionally contributed to purchasing decisions (p. 13). With higher fuel prices in 2007 and 2008, more consumers were concerned with fuel prices, but the concern is not universal. One relationship is that "[Those] who indicated fuel economy was a factor in their purchasing decisions [have] a lower average income" (Mahadi and Gallagher, 2008, p. 10). In essence, even the gasoline price spike did not undo the dominant mode except for those individuals who were

27

the most financially vulnerable. A significant portion of the population will drive no matter the cost because the automobile is central to its lifestyle and ideology.

Within different price points for vehicles, consumer choice often depends on perception and marketing. For example, vehicle marketing can promote engine size and horse power over fuel economy and off-road capacity for suburban users. The marketing of a vehicle or lifestyle shapes and exploits cultural perceptions. These perceptions held strongly when many were paying higher prices for fuel.

Marketing that romanticizes private vehicles based on desirable lifestyles, images, and values also contributes to increasing societal dependency on automobiles by instilling the role of private vehicles in consumers' minds. Individuals view the vehicles they drive as reflections of themselves, and the vehicle remains both private and isolated from the rest of the world. When the automobile industry communicates the romanticized private vehicle to the consumer, the industry "[taps] into commonly held views and ways of thinking about a topic" (Guiver, 2006, p. 235). In turn, the communication itself reinforces a mutual assumption of views and ways of thinking about private vehicles are commonly held.

Over time, the automobile and its supportive infrastructure have been connected with a wide range of social and environmental ills. Automobile use has been linked to climate change, air pollution, excessive land development, oil dependency, obesity, community isolation, driver aggression, drunk driving, and death. However, most drivers are unaware or just doing not care about of these issues when they start their automobile in the morning for their daily commute. The negative associations of the automobile are minimized within individual and social consciousness. Positive viewpoints about speed, traffic, cost, and safety are mentioned only within automobile discourse (Guiver, 2007, p.14) . The exact opposite is discussed about other

28

modes (p.14). When there is this great of a distance between public view of the transportation modes, then there must be an organized response that attacks the incorrect perception.

As a result, overcoming the automobile dominant mode is not a simple task. Automobile usage is socially constructed and reinforced through social ideologies. Cars are valued due to personal psychological factors such as perceived social status, or peer group pressures (Lucas, 2008, p.17). Lifestyle constraints are developed by the mobility of the personal automobile. The concept of "automobility" as defined by Urry (2000) creates an additional layer of socio-cultural expectations of how individuals must move between places. "Automobility coerces people to juggle fragments of time in order to assemble complex, fragile and contingent patterns of social life, patterns that constitute self-created narratives of the reflexive self" (p. 4). This lifestyle hosts both positive and negative associations. If the fragmented lifestyle is considered desirable and preferable, then automobility will remain unaddressed; however, if the negative attributes are publicized, the social patterns addressed could change.

In addition to the social contributors toward mode choice, the travelers' residential location, the particular trip purpose, and other perceived requirements contribute to the decision. The automobile-oriented physical environment enforces automobile-oriented behavior and the automobile-oriented behavior affects the physical environment. Advertising seeks to reinforce this cycle and establish a set of values from which to base the discussion.

Car Dependency and Advertising

If the American culture is automobile dependent, it is also advertising dependent. Advertising is a product of the rise of industrial populations (Ewen and Ewen, 1992, p. 35). If culture can be defined as an accumulated stock of understandings and practices by which a given people live and maintain them, it is no accident that there is a mass culture defined by a social landscape marked by consumer industries, mass media, and merchandising (Ewen and Ewen p. 35; Ewen, 2001, 41). The automobile is one the dominant consumer products to be produced by an industrial or postindustrial culture, and it fits within the consumerism that developed with the Industrial Age. Stuart Ewen (2001) argues that consumerism was socially constructed in the early 20th century as a means of sustaining a mass-production capitalist system. Within this system, marketing was the means of changing how consumers interacted within a capitalistic framework. According to Ewen, "Advertising offered itself as a means of efficiently creating consumers and as a way of homogeneously 'controlling the consumption of a product'" (p. 33). Advertising defined the accepted cultural idioms (p. 73).

Consumption took a cultural tone and advertising sought to produce a homogeneous national character supporting specific values aimed to keep American buying mass produced goods (Ewen, 2001, p. 41-42) Advertising "offered mass-produced solutions to 'instinctive' strivings as well as to the ills of mass society itself" (p. 44). Advertising introduced new frameworks while solidifying existing social norms. On one hand, traditional roles of the family like *mom*, *dad,* and *kids* were maintained but the legitimacy of *youth* was a new powerful ideological framework (p. 138-139). The *youth* framework was introduced to older adults as a means of identifying what was new and proper in the new age (p. 147). While the *youth* framework was introduced in the early twentieth century, it still holds a powerful role today. A

youth framework sells beyond the younger demographic, as older demographics seek to maintain a youthful image. However, youthful frameworks do not always match other clues in advertising material such as financial achievement since the "poor college student" is not always represented.

Many people are currently prepared to hold on to their existing car use behaviors and marketing material maintains this behavior. "Marketing communications can create expectations that influence the way consumers subsequently learn from their experience" (Braun, 1999, p. 319). Portraying the automobile as a universal tool influences how a person learns to rely on their automobile for all trips. Land use and fragmented trip making re-enforce the automobile dependency, but the image and fashion of auto use are equally important. Advertising has contributed to the notion that the automobile is a marker of success. It is a way that owners and drivers identify themselves as both an individual and a part of a collective group. People are willing to compromise other areas of household expenditure or put up with challenging driving conditions such as congestion and time. The automobile and its usage are heavily advertized within the media. Automobile companies and support services such as insurance and tires are constantly communicated to potential customers. Furthermore, advertising targets various subcultural values and images. Featherstone (2004) states "the car is seen as a part of a fragmented series of subcultures in which customizing, 'flexible specialization' and product differentiation dominate to the extent that a whole range of new types of vehicles emerge" (p. 6-7). Not only are manufacturers selling vehicles, but also they are selling ideologies to consumers based on perceived and constructed demographic groups. Each car is a smaller ideology within the greater automobile dependent frame work and Featherstone argues that "compacts, subcompacts, intermediate-size cars, muscle cars (powerful performance cars), pony cars (sporty,

31

youth-orientated cars), sports cars and personal luxury cars, [each] targeted to small niche markets" (p. 6). While there is a large dominant automobile ideology and culture, the automobile is also divided into sub-categories and sub-ideologies in order to appeal to a broad range of interests, maximize the consumer population, and saturate automobiles across a wide range of cultural interests. As a result vehicles are branded as "lifestyle choices" for consumers where the automobile is infused within the individuals' identity and vice versa.

Marketing within Automobile Dependence

The discourse of sustainable consumption gives this static object called power to the consumers while critical accounts hand it to the captains of consciousness, the producers (Dolan, 2002, p 176). In the latter account, automobile manufactures act as one of the captains of consciousness in both transportation and American culture. However, Dolan argues that there is a need to move beyond labeling power only to one specific group but rather to see power as a dynamic process (p.176). According to Dolan, power, consumption, and marketing are a dynamic process that "reflects the multiple and ever changing relations in *particular* societies" (p. 176). Consumer practices are social practices in which producers, captains of consciousness, attempt to insert their product and maintain an image whereby they become a driving factor in developing social practice.

One of the most powerful methods for marketing is simple repetition. Consumers are barraged with hundreds, if not thousands of promotional messages each day, and the consumers do not actively seek or process all of these messages (Hawkins and Hoch, 1992, p. 212). Fortunately, companies marketing products do not require consumers to be highly involved. Low-involvement processing of material can be greatly influential for consumers. Defined as *low-involvement processing* by Hawkins and Hoch, the decision to purchase is not a deliberate

32

decision process. Rather the process becomes more dependent on belief, where repetition increases the perceived validity regardless of that "actual" truth-value (p. 215). Repetitive marketing forms consumer beliefs and these beliefs are extremely powerful. As Hawkins and Hoch summarize, "The manner in which those beliefs are acquired may influence the impact that they have on subsequent behavior" (p. 233). For instance, if a pasta maker claims that a specific boxed macaroni is "rich and creamy," the consumer might accept the claim but it also affects how the consumer approaches pasta. In future purchases, the consumer might seek the properties of "rich" and/or "creamy" or even justify that the particular brand is more rich or creamy than other options without any investigation. It is important that the message be an ambiguous claim rather than specific but the impact of repetition is important to non-intensive choices. Non-intensive or low-involvement choices are decisions make by consumers that requires little to no research, evaluation, or personal time. An example of a common low-involvement is toothpaste. The average American consumer does not research a toothpaste purchase in the same way as a house purchase or even a college education. Rather the toothpaste purchase is based on behavior more closely resembling habit. This low-involvement processing is especially important in an automobile dependent culture. The choice to use the vehicle as well as what type of vehicle that is appropriate becomes a low-involvement decision. While the decision of which vehicle might be a higher-involvement purchase, the question of whether to buy a vehicle might actually be a low-involvement decision within an automobile dependent culture.

Repetition of certain vehicles portrayed within certain settings feeds into belief development because the message is ambiguous. Repetition is important in low-involvement decisions. Constantly and repeating creating belief about the role of certain vehicles where other modes are at a disadvantage reinforces cultural perceptions. Consumers are constantly looking

for ways to simplify purchasing and would prefer a simple decision to a complex decision. Repetitive statements build a belief concept that often bypasses some elements of the decision making process. For example, if a company executes an ad campaign that their vehicle is safe and the dealership discussion of that vehicle is reinforcing the safe component, then when the time comes for a consumer to buy the vehicle the likelihood of the consumer to accept the safe message within their purchase process rather than researching the crash tests from third party sources. In this case, the repetition of safety of a certain automobile can change behavior if the repetition is broad and accepted into the discussion and decision making process. In an automobile dependent society, it is not a question or a high-involvement decision for American society to buy and use an automobile. If anything, it is a high-involvement decision is not to buy or use an automobile of the consumers who possess the means to own, maintain, and use a vehicle.

In some instances, marketing communication can create a new space of cultural considerations, reinventing how a society approaches an issue (Kadirov et al. 2008, p. 187). In essence, the concept that there is an individual choice to consume and to consume particular items breaks down. The individual becomes an accumulation of social practices. Dolan elaborates, "even where consumption is seen as a purely selfish and individualistic pursuit, seemingly devoid of social considerations, we should recognize that such individualism is itself an outcome of historical and social processes" (Dolan, p.176). The individual as a result of historical and social process includes the effect marketing can have in shaping opinions. As Braun-LaTour et al. (2003) state, "marketing communications can create expectations that influence the way consumers subsequently learn from their experience" (p. 319). Marketing is not a stagnant communication of facts to potential buyers, rather it shapes how buyers receive,

store, process, and recall information. Earlier, Braun (1999) finds that advertising transforms

consumer experience extending beyond objective evidence (p. 332). Simply put, marketing is a

powerful tool in changing as well as maintaining individual and cultural perspectives towards

certain vehicles and vehicle types. In addition, the non-product material within marketing

material is also important. The marketing message is not just about the product centered in the

ad, but rather there are other messages about cultural norms. Ads portray "the good life," the

ideals of the society, and what the world "should" be for the consumer. The relationship between

the product and other information is a two-way street. When the non-product information is

presented, it is also shaping how consumers receive, store, process, and recall information.

If marketing influences individual and social practices, then it is important to know what

medium both the consumer and producer to search for vehicle information, because each one can

achieve different results, use. Print, TV, radio and word of mouth have all been important venues

for distributing vehicle information; however, the rise of the use of the internet has changed how

people search for vehicles. The internet has decreased the time and cost of searching for

information on automobiles (Ratchford et al, 2003). In addition, the Internet has provided

automobile manufacture a place to compile and distribute many different modes of marketing

material as well as engage an information-seeking consumer. However, the Internet is not a

uniform tool by all consumers. Ratchford et al. (2003) found that the share of search time spent

with the Internet is inversely related to age and positively related to education and dissatisfaction

with the dealer of the previous car. (p. 194). Regardless, of those who did use the Internet, two-

thirds stated that the internet-provided information was reliable and the sites most commonly

accessed were manufacturer pages (p. 199-200). As a result, the Internet is a credible source for

vehicle information as well as a major outlet for automobile manufacturers to disseminate specific information, becoming on-line captains of consciousness.

Corporations, including those in the automobile industry, create, use, and maintain certain important cultural perspectives. Kadirov et al. (2008) found through the analysis of manufacturer produced environmental and social reports that the manufacturer reports create a paradox. Unsustainable situations are defined as sustainable within the reports and these paradoxes are imitated by consumers in cultural behavioral patterns (p. 187). In particular, those who speak for sustainability often act in an unsustainable pattern. For instance, the mass adoption of hybrid vehicles is promoted and portrayed as saving the planet, yet the mass adoption of any petroleum-powered automobile will produce greenhouse gases that contribute to climate change. This paradox is produced within automobile manufacturer material and then paradox is imitated by the consumer.

If the automobile industry were able to create and maintain certain cultural patterns and perspectives, the logical response would impose information on various products and claims. However, this form of factual labeling does not always work. The food industry is an example where governmental regulations require nutritional information to be posted on food products. This labeling is similar to the Environmental Protection Agency's fuel economy estimates require to be displayed on many new vehicles. However, there is a problem. Wansink and Chandon (2006) found that nutrition information is not always understood the way it was originally intended. Wansink and Chandon found that low-fat labels increase the perception of an appropriate serving size and decrease the guilt of overeating (p. 605). This effect was more significant to those who were overweight as they ate significantly more than normal weight individuals (p. 609). For those who were normal weight consumers, there was a reduction of

overeating; however, low-fat labels decrease the guilt associated with the appropriate serving size (p. 610). Normal weight individuals maintained a view that low-fat snack foods were still and indulgence while over weight individuals perceptions changed completely (p. 610). Basically, those who were overweight and less guilty about overeating with normal calorie foods viewed low fat foods as being guilt free. In this study, the simple marketing label of "low-fat" changes how individuals view products despite government require nutrition labels.

The information provided by Wansink and Chandon (2006) can be applied directly to automobiles. With the Environmental Protection Agency's fuel economy estimates, it is likely that consumers will act in differently based on their preference for vehicles and driving guilt. The simple act of labeling a vehicle as a "hybrid" or "green" will have a drastic effect regardless of the fuel efficiency estimates. Those who are already are fuel efficient savvy and have a preference for limiting their driving amount will probably act in a similar fashion as those who were already a normal weight and calorie conscious. The fuel economy savvy will adopt a fuel-efficient vehicle but will also maintain a higher level of guilt for driving based on economic and environmental consequences. However, those who prefer large fuel inefficient vehicles and low guilt associated with driving will view a large hybrid SUV as a guilt free vehicle. In addition, it could be possible that this segment of the consumer population could drive more with less guilt, negating any benefit with an increase in fuel efficiency, just like those who over-indulge on low-fat foods because of the labels.

In the case of cars and trucks, automobile-dependent society and marketing remove the decision process. Transportation becomes a low-involvement process. This low-involvement process trickles down to vehicle type choices. This dependence and low-involvement decision-making process dictates which vehicles are appropriate environments and purposes. These results

are visible: SUVs and trucks become prevalent in rural and suburban environments was well as those with families while small cars are for urban places.

Visual Elements

One method of developing low involvement processing is image repetition. It is a visual association thus images can lead associations with products and certain situations. Thus, the imaged of a vehicle or another product are not solely visualizations or descriptive elements, the images themselves are communicating information both about the product and about other concepts. The visual representation of a product can represent the actual and the fantasy as images can blend the consumer's perception of "what is" with the perception of "what could be". This has been a powerful marketing tool to promote both truth and fantasy within a visual illustration.

Images

Using images as a means of control, the camera creates a visual vernacular by which the camera could "codify and capture an objectiveness 'truth'" (Ewen and Ewen, 2000, p. 18). Images also exaggerate experience and reality, and images seek to create believable fictions and fantasies (Stuart Ewen, 1999, p. 40). Focused exclusively on communication, Sturken and Cartwright argue that images are "not simply reflected back to us through systems of representation…we actually construct the meaning of the material world" (p. 13). The resulting approach is based within social constructionist theory.

Ewen and Ewen (2001) put forth that "fantasy is often processed as the raw material of what becomes truth" (p. 192) Automobile consumers seek vehicles to express/complement their individuality based on desired outlook to other people and themselves (Featherstone, p. 7). There is the "promise of 'unspoken prestige'" that runs through marketing material in the American

consumer culture (Ewen, p. 58). Ewen describes the promise of marketing material as, "You will be seen. You will be noticed. The symbols you display, your most valuable possessions, will permit you to stand apart from the crowd. You will be noteworthy and honored. You will be someone. You will have 'joined the select group" (p. 58).

Featherstone (2004) extends the identity beyond the individual in creating an escape into an automobile-influenced subculture. As he states, "In addition, given the retreat into subcultures and lifestyle enclaves, there is a decline in civility with people finding it more difficult to identify with the other drivers" (p. 7). The camera, both producing still images and video, is the most powerful mechanism for conveying fantasy. Moreover, "it was also a powerful mechanism of order and control" (Ewen and Ewen, 2000, p.18). As research into images shows, the camera can produce both reality and fantasy (Ewen, 1988, p. 90).

Society then makes "meaning of the material world through specific cultural contexts" (p. 12-13). What is particularly useful within this study is Sturken and Cartwright's approach to advertising. They state, "advertising replaced previously identified social fabric of communities, becoming, in effect, a central source of cultural values" (p. 193). Values then drive public policies (Rowley, 1997, p. 2). With these interdisciplinary pieces, a continuum emerges, where images create fictions and realities, framed by culture contexts and resulting in values that influence public policies. As an idea in the form of a word or image is reproduced repeatedly within public realm, it becomes *fact* (Ewen and Ewen, p. 192). As a result, style has become a visible world of memorable facts, capable of holding contradictory ideas simultaneously without conflict (Ewen. 1988 p. 262). Repetition and saturation determine the objective reality within the mass media society.

Because planning attempts to use local context-specific cultural values within the decision-making process, the planning process inevitably reflects the effects of advertising on cultural values. Tansey et al. (1990) argue a reiterative process whereby cultural values influence, and are influenced by, consumer advertising (p. 30). Advertising over-shadows matters of quality or substance (Ewen, 1988, p. 22). Everything from packaging, product design, corporate identity, and direct marketing produces a power of provocative style, which is persuasive to the targeted consumer (p. 22). In addition, advertising alters consumer values more than any other institution (Tansey et al, p. 31). It contributes to a reorganization of perceptions of the resources and alternatives that are accessible to people (Ewen, p. 41). Advertized values infiltrate the public/planner discourse with "inflated statements of necessity" for the automobile (Sturken and Cartwright, p. 207). Often this effect becomes apparent by example.

Vehicles and Visual Themes

In 1990, Tansey et al. performed a cross-cultural analysis of automobile advertisements in 1970s American and Brazilian popular magazines. They identified two units of analysis that were a particular interest for the researchers. The study focused on two print ad themes in the cross-cultural study: "(1) the urban theme and the wilderness theme, and (2) the work theme and the leisure theme" (p. 31). The urban coding scheme was defined as being a streetscape, population or commercial center, or a scene of traffic congestion (p. 34). The wilderness consisted of be a background of uninhabited and pristine frontier, but also included a vehicle showroom and a restaurant (p. 34). Tansey et al. identified that urban themes were used more frequently in Brazilian ads than in U.S. ads and leisure themes were used more frequently in U.S. ads than in Brazilian ads (p. 30). While the two units were defined as separate units, there was considerable overlap between the descriptions. The urban/wilderness coding scheme focused

more about the type of activity rather than the urban form. As a result, a restaurant was coded as a wilderness scene, despite significant human activity. However, a restaurant scene might have escapist social contexts associate with a mountain retreat or other "leave the home" trip. Therefore, the urban/wilderness scheme was overlapping with the work/leisure scheme based on the amount of work-related and recreational activity rather than urban form.

This unintentional overlap does feed into the suburban perception that the "wilderness" and recreational and the "urban" as being associated with the commute and work. However, Tansey et al. focused on the social aspect associated with the American portrayal with the automobile within the wilderness construct. The less prevalent portrayal of the automobile in the urban environment in American ads, was attributed to being "surrounded by the chaos and clutter of modern city life, they often yearn for the idyllic lifestyle symbolized by [farm] of the 19th century" (p. 32). Furthermore, the portrayal of the American vehicle in the wilderness suggests "the existence of an anti-urban bias in the U.S… and glorification of the independent farmer as the backbone of the [American] ideal" (p. 37). Tansey et al. acknowledge the cultural value component of automobile advertising; however, the relevance of the impact of the portrayal of the automobile within land use form was under realized. While there was a criticism of how the automobile is more likely to be portrayed in the "wilderness" setting, there is no analysis of the type of vehicle being portrayed. In addition, there was not discussion about the difference in the type of vehicles being sold in the United States and Brazil. Nonetheless, the study acknowledged that the portrayal of vehicles in various settings communicates to values and perceptions of the consumer.

In essence, automobile advertising forms an intersection where the private and subsequently public realms are developed and reinforced. Consumption is a social relationship,

41

and it forms the dominant relationship in American society (Ewen and Ewen, p. 51). In advertising, the urban form is discussed within a social medium. Advertisement imagery is a central and continuous role in the reinforcement of ways of life (p. 24). Advertising depicts choices for lifestyles, and these lifestyles are placed within the contexts of land use and urban form. Ultimately, the suburbs became the claim of escape from reality (p. 179). However, the suburbanization of the American populous created a new need for escape. There was the desire to escape from the suburbs and the wilderness was an appealing alternative. Within the consumer society, if there is a solution to be had, it can be bought (p. 24). Automobiles are the solution, so people can live in the suburbs to work and drive into the wilderness to play. As a result, the vehicles can be portrayed as an escapist device.

Collectively, the depiction of vehicles with various values and cultures then influence individuals who in aggregate form the public and the public's opinion toward automobiles and land use, culture, and norms. For example, when an automobile advertisement depicts an urban form behind a vehicle, it is depicting an ideology into which the consumer and public must conform to and enforce. When the vehicle is purchased, then the operator of the vehicle expects certain values associated with the vehicle through the media.

Land use and Cultural Values

Land use and cultural values play into the automobile influence of cultural values. Much of what we consider defining of an urban form is associated with the means in which individuals move within those spaces. These values are interconnected as the means in which we move through space also helps define how we identify with the space. For the automobile oriented perspective and automobility, space is seen through the windshield so to speak. On one hand, distance can be covered much more quickly and more freely than other modes. The automobile oriented landscape is accommodating for automobile users and allows for hyper-flexible movement. On the other hand, non-automobile users find the automobile landscape much more encumbering while non-automobile scaled environments are problematic for the automobile culture. Some land-use related cultural values, such as suburban and rural values are dependent on the automobile to provide the ability for that urban form to exist. The automobile shrinks the suburban scale into manageable distances while the self-reliance aspect of rural culture is dependent on the vehicle to cover great distances with various uses. Remove the automobile from either suburban or rural environments and both land use and cultural values will shift dramatically.

Rural Values

The rural is often an easy to understand concept of human space but a specific definition is often challenging because the criteria and measurements do not easily apply to all potentially rural spaces. Clout (1984) puts forth a simple and easy to operationalize definition of rural based on five criteria:

1. Low density,
2. Loose network of infrastructure,
3. Tight interpersonal networks with strong home and local identity,
4. Below average manufacturing and office-based employment, and

5. Landscape dominated by farmland and forestry.

The problem with Clout's criteria is that non-rural places can have some of these qualities as well as some rural areas might also be lacking one of these criteria. Many urban places have tight interpersonal networks with strong home and local identities while some rural places have higher than average employment in manufacturing. Clout's criteria are difficult to label places rural while also being exclusive enough to separate urban spaces as well. However, Clout's definition works well with how people view the rural. Instead of the five criteria being properties of a rural place, they are properties of how people perceive rural places in contrast to urban places. Rural is more mirage than reality (Hoggart, 1990). Rural spaces are widely understood settlement pattern but the labeling of rural places is imprecise (p. 35). Likewise, when labeling something as rural, there can be significant material and rhetorical consequences (Marston, 2000, p. 229. Space is a social product (Marston, 2000; Lefebvre, 1991) and how people discuss and perceive what rural is has an impact on the values associated with them regardless of the validity of the perceptions.

Within the automobile dependent society, rural values and perceptions are most often associated with some form an automobile dependent lifestyle. Long distances between origin and destinations for basic services often inhibiting pedestrian trips, and there is little market availability for transit or other fixed modes. The flexibility and speed of the automobile works well within the rural land use and form, but the connection between the automobile and rural life does not end at the physical environment. Both the automobile and rural life incorporates a strong affinity towards the concept of independence. Rural individuals, especially older rural individuals, value their ability to remain independent and often the automobile is the means in which they achieve perceived independence (Johnson, 2002, p. 237). However, Kline and Pinch (1996) show that the automobile was not initially accepted within the construct of rural values.

Surprisingly, the early automobile was a source of tension between urban and rural dwellers (p.768). Rural individuals even booby trapped the roads to discourage automobile use (p. 772). Eventually, the automobile was adopted as a tool and not as a means of mobility within the rural lifestyle. Advertising played a strong role in promoting the automobile in rural society, especially in showing the conversion of the automobile's backseat into a truck bed (p.773). The automobile was adapted by rural users for many uses ranging from chopping wood to washing clothing (775). As a result, the automobile provide mobility, allowing access to rural places, but the automobile was also adapted and viewed as a tool for providing the rural lifestyle. The automobile was ingrained within the values of rural America and has been developed to appear to the rural values through the progression of the automobile.

The rural adoption of the automobile was significant. Not only was it a tool for those in rural America, it was also the urbanite's means of escape to the city (Kline and Pinch, 1996, p. 768). However, selling the automobile based on rural values not only connected with the rural farmer, but also the city dweller seeking to connect or reconnect with the Jeffersonian ideal of the independent farmer. The rural connotation within advertising and social perceptions includes "Americans' collective appreciation for rurality" (Rowley, 1997, p. 2). The rural lifestyle and values are generally considered intrinsically American. As a result, many people identify rurality as a fundamental American value (p. 3). Furthermore, rural-ness is a positive value within the imagery of rural descriptors such as "pastoral, bucolic, and untamed" (p. 3). These values and images have been introduced and reinforced "throughout the Nation's history and are expressed in its literature, art, music, popular culture, political opinion, and residential preferences" (p. 3). John Logan (1997) argues, "We value "rural America" no less today and perhaps even more than in the past… Americans displayed a romantic attachment to rural values and mistrust of the city

(p. 20). Logan identifies several particular constructs and perceptions within the American ideal of rural values: hard work, family, community, nature, and safety within the overarching concept of "rural values" (p. 20). When rural values are spoken about, these concepts are grouped together within the American psyche.

Furthermore, whenever a person or an advertisement communicates rural imagery, the person or ad is invoking several values and powerful images. The media connects with our own imaginations and perceptions within the rural ideal. Here, the rural illustration of hard work conjures the image of the "productive farmer, up before dawn and earning an honest living through hard and independent work" (p. 20). Not only is the rural work ethic idealized, but it also includes an association with independence and self-reliance. The American rural family is also included in the independent household within the rural environment. Logan's community aspect of rurality includes "gathering places where social relationships are face to face and personal and where everyone knows your name—barn raisings, church picnics, the general store" (p. 20). This form of community is in stark contrast to an anonymous and isolated city or suburban imagery.

The idealization of rural America does not stop at the individual and social imagery. Within the rural values, there is a sense of an elevated connection with nature and the natural world. Like the idealization of the rural, "nature is where we find what is authentic and right" (O'Niell et al. 2008, p. 131). In the New World such as the United States, the term "natural" is specifically referring to an environment that is untouched by human activity: wilderness (p. 132). Although there is considerable alteration of the natural world within rural human activity, the rural America is environmentally friendly where the air and water are unspoiled, green spaces are abundant, and the sky is big (Logan, p.20). Somehow, rural activity is associated with being in harmony with nature and the urban life is in contrast unnatural. Finally, there is the association

46

of rural America as a safe environment. Logan characterized the safe rural environment as an "image of children wandering freely through fields and streams, of unlocked doors, of encounters with people whom you know as friends and neighbors" (p. 20). The result of the grouping of various values, rural America becomes a catchall for several idealized American values. The outlook towards the rural and the natural wilderness is simple. The wilderness is the highest valued environment when dealing with nature, but a rural environment is the highest valued environment involving human culture. Connecting the rural or wilderness with any entity, including the automobile, connects with very strong and rooted American values.

Not only are these values considered preferable over urban values, but also the values have more persuasive truth associated within the presentation of rural values. Despite the potential of a rural environment and society to be perceived as backwards or inferior, the rural image held in popular American culture is considered to always be genuine and trustworthy (Howarth, 1997, p. 5). As a result, any image or item placed within a rural backdrop or setting connects with a source of legitimacy based on the perceptions of rural values. Here, only the rural life can be trusted while the city life remains potentially counterfeit or copied (p. 5). This is not simply a rural distrust of the urban environment; this is a widespread urban, suburban, and rural trust of rural America. Howarth (1997) states the underlying modern paradox of American social values, "in a Nation dominated by urban people, our prevailing values derive from rural traditions" (p. 5). As a result, many of the rural perceptions and values are not only held by rural individuals, but also by individuals who might not have ever lived in a rural environment. There is an artificial element into how the values are maintained within the more urban social perceptions about rural America.

The social perception also has a rooted history within American society, and there have been several movements that praise the rural life over the urban existence. David Danbom (1997) argues that the rural idealization follows "in close conformity with the modern, anti-urban thrust of post-Jeffersonian agrarianism" (p. 16). Furthermore, the automobile first appeared at a fortunate time were "turn-of-the-century, back-to-the-land enthusiasts promoted the countryside" (p. 16-17). In addition, the rural environment was not actually praised for the representational image of what is rural, but rather for what in contrast to: the urban. As he states, "those who urged city people to take up farming, the countryside served as a counterweight to an urban existence that was artificial, physically and mentally taxing, and socially destructive. (p. 17).

Many of the associations with rural America become mythical values that extend beyond the reality of the actual rural environment. The positive construct of rural America is neither always universal nor representative of an actual place or culture. The rural dweller identification of what is rural might be different from the urban or suburban dweller of what is rural. However, despite the potential differences, rural, urban, and suburban identification with the concept of what is rural is always positive, regardless of whether or not the perceived concept is representative of an actual rural place or environment. According to Rowley (1997) "Americans value rurality for what it is, what it is not, and what they believe it is or is not" (p. 3). Rural America values have an advantage of being situated in the place where most of us do not live anymore, which frees us to reconstruct it in our imagination (Logan, p. 21). Combined with the perceived trustworthiness of rural values, even artificial fantasies of what is rural can be construed with significant amounts of legitimacy. As a result, rural America is not solely a certain combination of preferable values, but it can also be an ambiguous depot for any preferable value. The rural is valued "because of its plasticity; because we can impart virtually

any values we want to it" (Danbom, p.17). Rural America becomes a tool for providing a critical perspective to urban, suburban, and other environments (p. 17).

The rural values provide not only the set of criteria, but also an underlying and easily accepted legitimacy in which the other landforms cannot compete. The rural values and identity becomes the "yardstick" in which to judge other land use forms. The suburban is judged based on any share attributes to rural and the urban is devalued for its perceived opposition to the rural. For example, the rural is valued for open space and natural features such as streams, pastures, and woods, and both suburban and urban landforms accommodate these small slices in the form of parks and green spaces. This approach to the rural and urban, based on rural values is an American phenomenon with values stemming from an American culture. The rural values for the United States may not apply into other regions of the world; however, the form of automobile dependence and marketing of the lifestyle within the U.S. is dependent within the context specific culture, values, and history of the interaction between the rural and urban within the American city.

Once the automobile was adopted within the rural value system, the automobile became the link for maintaining certain social and economic practices such as driving into town for various reasons. The automobile was noted for the ability to end rural isolation (Kline and Pinch, 773, 2005). The automobile reduce the spatial-temporal distance for the rural lifestyle, allowing the rural individual greater access to amenities. As a result, the automobility reliance of the vehicle became more pronounced given the distance required to travel in order to maintain a fragmented social network. However, rural environment is more reliant on the automobile as the sole source of speedy transportation because of the lack of an alternative mode due to the land use characteristic. Most rural areas cannot shift on to another mode. The distance between

origins and destinations are often too far for pedestrian or bicycling trips. There are often too few trips to justify mass public transportation such as a fixed bus route or a rail option.

This limitation means that while there is the potential for changes in land use or rural social structure that could reduce the automobile dependency in the long term, most rural areas do not have a competing mode in which individuals could choose a different mode without significantly altering their daily behavior. Whereas the urban individual living in the vicinity of transit could potentially take a bus the next day if gas prices are too high, the rural individual might not have the option. Unlike suburban environments, the rural environment was not specifically designed to accommodate the automobile. The rural environment and transportation network is focused around the production of the land. As a result, rural individuals are constrained to keep the extended social network across a large distance while paying increased fuel costs. In particular, car ownership and use is more sensitive to changes in costs for urban households than rural households (Joyce Dargay, 2002, p. 363). Because of the more transportation options, the elasticity of car ownership regarding costs is twice as high in urban areas as it is in rural areas (p. 363). Fuel costs have an effect on ownership and use in urban areas, but rural areas continue to use the automobile regardless of fuel costs (p. 363).

The inelasticity of car use in rural areas is not without a social cost. The high costs of car transport pose a considerable economic burden for rural households (Joyce Dargay, 2002 p.363). Unlike urban individuals, rural individuals face greater distance to access services. As a result, high fuel cost for automobile use is a more significant issue for rural individual. Not only are rural individuals paying more for fuel and are unable to switch to another mode as easily without a reduction in mobility, but the greater distances to travel for services magnify the cost of fuel.

Rural values, automobility, automobile dependence, and advertising share a unique relationship. Rural values have adopted the automobile as an integral tool within rural society. The automobile allows rural societies to have greater spatial/temporal flexibility, allowing greater flexibility to services, and connecting rural communities together. Rural communities are more dependent on the automobile than the urban counterparts are. Yet despite the dependent and tenuous relationship between the rural environment and the automobile, there is an embedded trust for items and values associated with the rural environment. The automobile industry understands and connects with the rural values, portraying the automobile as both a central element within the rural lifestyle as well as a necessary means of providing the rural lifestyle. Despite showing automobiles in rural environments, the imagery connects with urban and suburban fantasies of the preferable rural value system. In this case, the vehicle and imagery are not required to accurately represent of conform to certain rural environment, but rather the imagery of the vehicle conforms to fantasy element and imagination of the rural environment and leisure lifestyle. If the rural environment is a more pure version of human activity, then the removal of human activity is a higher fantasy. The American concept of wilderness takes the preference of the rural lifestyle and furthers the fantasy with an escape from the constraints of the human environment.

The American Wilderness Narrative

As O'Neill et al. suggest, the question is "how best to continue the narrative of the places through which we walk" (p. 155). Yet, the mode of travel is not always that of the pedestrian, but more often that of the automobile. The automobile is rooted as the dominate means of transport, including the dominate means of transport for the public to access nature. In particular, the capability of the sport-utility vehicle guarantees access to nature to potential consumers. Much

like how the tractor has replaced the oxen-plow as the means by which the farmers till their land, the automobile has replaced other modes and the means by which Americans access what we perceive to be the remaining parts of the wilderness. As a result, nature and wilderness are displayed within the narrative of the automobile. To this point, the concept of nature warrants further clarification.

The image of nature held by Americans differs slightly from region to region. As O'Neill et al. explain, the nature narrative lies within the spatio-temporal concept (p. 148). The automobile allows greater access to nature. The automobile makes nature a "day trip" in which a large amount of Americans can drive to nature, access it, and then leave to rejoin civilization for dinner. The image and understanding of nature by Americans is based on the location and time period from which the individual is exposed. The image of nature is different for a person in the Northeastern United States than someone from the Southwestern U.S. However, advertising requires a large general concept of nature from which it can connect to consumers. As a result, there is a base-level image of nature held by Americans, but there are even ambiguities within the basic image. First of all, the term "nature" can be used in a broad sense and a very narrow sense. A broad sense of nature can apply to any form of existence and processes of the universe. Nature is the ordering of the universe and existence. It is a default state of existence. Therefore, nature is the normal and expected. Automobile advertisements can use this broad sense of nature to associate their vehicles as being the norm. For advertising, a broad definition of nature allows for more liberty with their message, but it does not allow them to connect with the consumer's more intimate image of nature.

A specific image of nature is what advertisers seek to connect with consumers. The specific image, which advertisers portray of nature, is the world without human alteration.

Explaining the non-human world concept, O'Neill et al. quote Hume: "nature may also be opposed to artifice" (p. 127). Nature in this notion is defined in opposition to the artificial, the altered, and the disturbed environment. Ironically, the vehicle's intrusion onto nature defeats the undisturbed quality of nature. The automobile ads are set in the natural world to contrast traditional automobile settings of asphalt and concrete. Images of a car parked under redwoods or beside a bubbling brook are more appealing than a vehicle constrained by congested highways and crowded parking lots. As a result, the automobile is not part of nature, but the automobile lifestyle is promoted in a fantasy setting. This fantasy setting is the automobile connection with nature, particularly the wilderness.

Wilderness is rooted within American society. O'Neill et al. state, "In the 'new worlds' the term 'natural' has tended to be used much more starkly to refer to wilderness" (p. 132). Wilderness is the American form of nature. While the wilderness/nature association exists in other parts of the world colonized by Europeans, such as Australia, the image of the plains, Rockies, and redwood forest is a very different wilderness than the Australian bush. Like nature, wilderness is defined as landscapes that are devoid of intentional human alteration. The difference between nature and wilderness is that wilderness is a specific category of nature, which is connected with the origins of the American cultural identity.

Nature and Wilderness

Kempton et al. asserts that there is division within how groups of Americans see environmental policy. Kempton et al. identified various social groups, which included two environmental groups, The Sierra Club and Earth First! While both are considered "pro environment" the two groups are different in their approach to environmentalism. The Sierra Club is a national organization, which uses it members and finances to lobby governmental

entities for specific policy outcomes (p.21). Earth First! is a different organization that has been involved in direct action in protecting wilderness environments. Their methods include sabotage and other actions, which place member in physical danger in order to achieve environmental goals (p.21). Kempton et al. labeled Earth First! a radical environmentalism in which members possess a religious fervor towards environmental beliefs (p. 21-22). Kempton et al. include two groups, laid-off sawmill workers and dry cleaner proprietors to contrast with the environmental focused Sierra Club and Earth First!. Kempton et al. expected the unemployed saw mill workers to be mostly anti-environmentalism because their employment was resulting from increasing environmental legislation limiting the lumber industry. Kempton et al. recognized that the Earth First! in addition, sawmill groups are less comparable because the Earth First! outlook is much more ideological than the sawmill group (p. 22). Finally, Kempton et al. included a general public group surveyed in California. Kempton et al.'s sample size was small with only 142 respondents, averaging 39 respondents per group. Kempton et al. acknowledged the limited ability to draw generalizations from the data set. As a result, Kempton et al. results are better for identifying potential issues rather than asserting claims about larger preferences and attitudes for environmental values.

According to Kempton et al. "*Prevention* is the method most often thought of for solving environmental problems" (p. 25) In contrast, the act of *adaptation* is the means in which people live with an environmental change rather than attempting to prevent the change (p. 25). Both of these approaches look at a *cause and effect* approach to environmental issues. However, there is a problem when there is not a direct relationship between the cause and the effect, particularly with global environmental issues such as climate change. Kempton et al. use the prime example of automobile pollution and air quality whereas an individual choice to drive does not cause the

whole of the pollution, but it is rather the result of a collective action (p. 26). In addition, there is

the disconnection between the causes an effect where the effect is not always felt by the driver.

In essence, automobiles and air pollution is the tragedy of the commons.

The disconnect between American environmental thought and action is not something

revolutionary. Dale Jamieson (2006) describes the conflicting thoughts and behavior of

Americans within *An American Paradox.* In Jamison's article, he identifies through a synopsis of

surveys that Americans view themselves as environmentalists, they are willing to pay for green

policies, they believe that climate change is real and bad; and they are willing to pay to mitigate

it (p. 97). However, since 1997, Jamieson argues that American support for green policies flags

as policies are more carefully specified and precise costs are associated with them, and they

dislike policies that are most favored by economists and policy experts such as emissions trading

rather than prohibitive policies, gasoline taxes rather than CAFE standards, incentives rather than

sanctions (p. 98). Kempton et al.'s (1996) respondents such as the public group, dry cleaner

groups, and sawmill group reflect Jamieson disfavor of fuel tax. Most of the respondents in the

three groups argued that a fuel tax would be unfair because some people are "forced" to use more

fuel because of business or personal needs (p. 151). This unfairness seeps into the justification of

why light-duty trucks, as well as vehicles over 8,500 lbs. need a separate standard for fuel

efficiency since it would unfair to penalize the vehicles because of their intended purpose.

Kempton et al. follow stating that their subjects did not connect the link between energy

conservation and climate change and generally oppose energy efficiency (p. 141). One interview

respondent in Kempton et al.'s study put forth three main assumptions regarding fuel efficiency;

1) high MPG vehicles would be smaller and less convenient, 2) the energy saved would be small

in relation to national consumption, 3) there are larger, more important issues rather than

automobile efficiency regarding energy conservation (p. 142). There is some truth in the respondent statement. American automobile manufactures shed size and weight to passenger vehicles (National Academy of Sciences, 2002 p. 3). However all other vehicles including imported passenger vehicles, pickup trucks, vans, and SUVs increased the size (National Academy of Sciences, 2002, p. 15). Furthermore, the latter two assumptions are incorrect considering that transportation, in particular, private automobiles account for a significant amount of transportation energy use (Kempton et al. p. 142).

While the majority of Kempton et al.'s respondents supported the regulation of manufacturers to make fuel-efficient vehicles, there was more objection to fuel efficiency requirement if it infringed on personal liberties such as being "told I couldn't drive a particular kind of car" (p. 143). This reflects the American paradox: Americans enjoy the concept that it is good to support a fuel-efficient policy requiring the production of fuel-efficient vehicle for as long as Americans are not required to buy them. CAFE standards reflect the paradox and the light-duty truck and passenger vehicle division.

Peak-Oil and Crisis Response

This research project addresses advertising material produced after the 2008 peak oil crisis. While the study is two years after peak oil prices, the two years have allowed the automobile manufactures to retool their marketing campaign as well as produce new vehicles to adapt to new market conditions. In 2008, the price of crude oil peaked just under $150 and the United States experienced gasoline prices well above four dollars a gallon (BBC News, 2008; U.S. Energy Information Administration, 2010). For many Americans with large fuel-inefficient vehicles and an automobile dependent lifestyle, the spike was a significant financial event that was felt in nearly every American household. As a result, the number of vehicle miles traveled decreased rapidly (Federal Highways Administration, 2008). More importantly, vehicle miles driven in rural areas decreased more than their urban counterparts (Federal Highways Administration, 2008) did. However, the peak oil and gasoline prices were not sustained and crude oil and gasoline prices dropped significantly during the global financial crisis (U.S. Energy Information Administration, 2010). In 2008, the peak oil crisis was a significant threat to the automobile dependent lifestyle but it did not last long enough to end the dependency, change land use, or cause a permanent modal shift. However, it was a shock to the automobile dependent system that might have caused some changes.

The peak oil prices of the summer of 2008 provided a crisis for automobile use, but as a new oil restricted approach and discourse emerged, the existing dominant ideology resists the change; American drove less but they did not abandon the automobile. With peak oil, there was a desire for fuel efficiently due to increasing gas cost. As Boyer (1983) summarizes from Michel Foucault: "the utopia of a perfectly governed city, the most efficient and economical method to spread a disciplinary order, can be drawn from the seventeenth century's image of a plague-

stricken town" (p. 59). In this example, the desire for order sprang from an epidemic. Likewise, during the peak oil crises, individuals changed vehicles and travel habits just as an immediate hierarchical order was imposed upon the town when the plague appeared in the example above (p. 59). Essentially, the arrival of disease and death as well as peak oil change both changed the organizational perception of how the urban environment interacted. With the epidemic, whole areas of the city were quarantined and movement was severely restricted. Outsiders were shunned and residents were forced to remain in designated quarters of the city. This event changed transportation in the early modern city and created a new urban system. In the modern day example, the cost of transportation, such as the increase in petroleum price over a short timeframe, began to change American mobility. However, unlike the epidemic, the peak oil price was not a prolonged, recurring event. Soon after the peak oil crisis, the price of petroleum dropped, potently halting the changes.

Boyer's (1983) example of the plague shows that what arose from the epidemic was a new system that also brought about other new disciplines. As a result, "discipline brings into play its power" (p. 59). When the disciplines change within organizations, the power structure also changes. Those who built massive highway projects like Robert Moses and other highway departments gained a new power base. For the automobile, the U.S. had long been enamored with what it perceived as the fastest and most efficient transportation mode. As the powerful mode, the automobile changed the country's infrastructure. For example, the Interstate Highway System redistributed both passenger and freight volumes away from other modes such as rail. The automobile encourage a redistribution of housing stock, particularly in the suburbs. Mass automobile use required large paved areas for automobile storage. This change led to a domino effect of additional changes to urban, suburban, and rural development. According to Boyer,

"The sudden growth of the automobile started a continent-wide redistribution of population and industry" (p. 173). In some ways, the emergence and dominance of this mode of personal transportation functioned as a slow moving crisis. Today, the U.S. cannot imagine how it could operate without this mode of transportation. The automobile has achieved both structural and discourse dominance because it changed the mode of transportation and the definition of what is urban.

Specifically, the country switched to personal transportation, and the interstate system redefined the county as a single unit. As Boyer explains, through this system "country and city were one functional unit… transport facilities had little or no relationship to political boundaries" (Boyer, 173). The city was extended beyond traditional boundaries, and this extension eventually led to the creation of regional planning. Improved and coordinated highways systems were essential to the prosperity of the city, yet no matter how the planner coordinated transportation lines, the poorer towns and suburbs had no means to construct them. As Boyer concludes, "then, transportation, traffic, and highway solutions formed the heart of most regional planning strategies in the 1920's" (179).

As the automobile progressed, particularly in the 1920s, the country struggled to gain control of the transportation network. Budding auto drivers, busy streetcars, dominating railroads, and new shipping capacity began to plague busy areas of modal transfer. Much like the plague in the early modern city, there was an interest to control access and movement. However, in the desire for control, the discipline brings into play its power, and both the approach and organizations develop around the new discipline (p. 59).

Discourse

In order to identify and describe the values within the marketing of automobiles, researchers analyze discourse. In particular, critical discourse analysis enables the values to be labeled and defined. Discourse analysis is a tool to understand the language and authority within certain planning issues. It has become particularly useful for urban researchers to understand policy implications, public process, and the way certain actors exercise power (Jacobs, 2006, p.39). Furthermore, it is applicable to analyzing within an issue and across multiple issues. Discourse analysis is also useful in analyzing the perceptions of one mode over another. Guiver (2007) found that his focus group respondents not only used different criteria to talk about each mode but also talked about them differently when they positioned themselves as users or non-users. In particular, they described bus travel in terms of worst-case scenarios, but they did not use this narrative style for car travel (p. 14). These differences in discourse and perception are reflections of power and a decision making process. When the individual identifies with the advertising of one vehicle over another, the image portrayed in one connects with a ideology and power in the individual's vehicle and mode choice. Discourse analysis is the means in which to understand this process.

Jacobs (2006) describes discourse analysis as providing "a set of tools to interpret urban policy in a theoretically informed and insightful way" (p.39). While vehicle advertising is not setting public policy, it is forming public opinion. As a result, the members of the community who are inundated with automobile oriented media, may reflect the values and expectations presented in the automobile advertisements. Discourse analysis can address how marketing interacts with the public and how key politicians, government agents, and community members interact through the process. Therefore, defining the process contributes to analyzing the role of

transportation modes and preferences. Much of discourse analysis builds upon Norman

Fairclough and Michel Foucault (p.39). Jacobs concludes a discourse analysis-based approach

assumes the public/political realm includes "different interest groups seek[ing] to establish a

particular narrative or version of events as means to pursue political objectives" (p.39). In

essence, creating an automobile dependent community accomplishes that the community with

defend the accommodation of the automobile. This desire to accommodate the automobile is a

constant political objective with the built environment. In regards to transportation planning,

there are individual commuters, local councils, state agencies, federal agencies, business, and

community groups all vying for their own political objectives. Jacob asserts two main reasons

why discourse analysis is useful to urban policy and planning. The first is that it focuses on the

decision-making process on a broader scale (p. 40). The second reason is the recognition of the

role and power of language in the policy-making area. With the recent establishment uncertainty

to the oil supplies and the private automobile, the decision-making process and language used

during the process determined the outcome of the policies. Language establishes "truth" within

which the process is determined (41). Beyond traditional discourse, analysis is critical discourse

analysis. Critical discourse analysis approaches how ideology, institutional process, or the

institutions themselves control and replicate power (Fairclough, 1995, 132). The analysis of

transportation requires understanding of institutional power and ideology in shaping the policies.

Discourse analysis and critical discourse analysis have been implemented successfully in

urban research, particularly relating to transportation agencies. One of the most relevant usages

of discourse analysis and a single transportation agency was Dutton and Dukerich's (1991)

longitudinal study of the Port Authority of New York and New Jersey and its response to

homelessness, an issue that is both relevant and visible to the organization. (520). While this

issue was a terrestrial based issue, it provides an example of how a freight transportation organization interacted within the public process to address an issue. Dutton and Dukerich's work conceptualizes the process through which organizations adapt to and change their environments. They used and interpreted from open-ended interviews, texts from the Port Authority, articles from the media, and conversations with employees. Their initial research question explored differences in how groups in the organization interpreted and responded to the issue, but rather than finding inconsistency and ambiguity as they expected, the organizational members expressed consistent interpretations, stemming from a shared organizational identity. This can be expanded into the private automobile in identifying shared and divergent approaches to automobile discourse on the state and federal level. In addition, Dutton and Dukerich are able to analyze the data for change over time by developing a complete theme list, coding the interview data, and constructing an issue history (524). The results are five stages of organizational response: an initial limited reaction focused on homelessness at the bus terminal; a second stage change in the way that they talk about the issue, specifically because of a new director; a third stage of symbolic actions including a centralized project team and an internal fellowship to study the issue; a fourth stage of increased involvement, emotions, and publicity; and a fifth stage of quiet support for the issue with the hopes of decreasing negative publicity. Using a similar framework would be useful in determining how the perception of the private vehicle progressed from the eras of cheap gas into eras of either gas shortages or high gas prices.

In addition, Dutton and Dukerich tie the pattern of issue-related responses to the organization's identity. In the case of the Port Authority, their identity as a business of transportation prompted and constrained issue-related action, and by the fourth stage their response to the issue over time resulted in a negative image, as observed in the articles from the

media. Thus, the image portrayed in the media feeds into the public perception of transportation and relates to the issue of motivating communities to support public transit, the initial concern of Rhindress et al. (2008). As Dutton and Dukerich's (1991) analysis shows, an issue may be multifaceted and shift over time, but a few studies have investigated the underlying struggles surrounding automobile transportation and discourse, including addressing who has the power to control the discourse.

In a similar study, Matthews and Satsangi (2005) offer another perspective on discourse and transportation agencies. They identify powerful actors in a study that examined the redevelopment of Leith Docks. All issues or projects have certain powerful people or organizations that dominate a topic. For transportation, the Department of Commerce, various departments of transportations, and the Federal Highway Administration wield significant powers, while state agencies might have official and unofficial sway. At the Leith Docks, it was the planning authority that was able to gain power over the development of Leith Docks. Eventually "a hidden conflict between the land owner/developer and the planning authority existed, over design quality and strategic use of land. To resolve it, without the power to develop, planners turned to a professional discourse grounded in theories of urban design and sustainability to add weight to their policies" (508). Matthews and Satsangi (2005) also distinguish and applied critical discourse analysis in a more defined manner. In this approach, critical discourse analysis is not a single method. It is an overarching theory of how individual texts are contained within a wider social development and discourses. As a result, they identify the differences between texts, rather than within texts (498). Likewise, the analysis between the different state methods and procedures between transportation policies are a part of the greater national transportation concept but they are fundamentally different from each other.

Discourse analysis his provided transportation planning a new form of qualitative research options. While discourse analysis is interdisciplinary, it can fill the gaps left by analytical approaches (Fairclough, 1991, p. 205). In particular, it can introduce data within a social context (p. 205). Guiver's (2007) study is similar to other studies in the field of transportation planning, but his methodology has unique implications for further research. Instead of constructing mathematical models or surveying a large sample, he used discourse analysis to identify themes across 10 focus groups. In his opinion, "discourse analysis provides an excellent method for listening to transport users and gaining insights not available from other methods" (p. 15). His work begins to address the linguistic turn in transportation studies, as he notes social constructionism is the ontology underlying his method (p. 4). Like Guiver's study, auto dominated discourse could be addressed by using focus groups or specific community organizations to determine values rather than a broad anonymous survey. Jaworski and Pritchard (2005) also identify the growing importance of the "discursive turn" as they call it, and the methodological approach to the study of tourism (p. 3), particularly in the formulations and reproduction of dominant ideologies. "Foucauldian-informed analysis is perhaps more appropriate for historically based archival research, whilst critical discourse analysis informed by Fairclough's work is especially suited to researchers keen to emphasize the recursive relationship between language and power and the importance of the economy on shaping policy discourses" (Guiver, p. 48). For an analysis of individual modes, there is the ability to use both Foucaudian archival record approach such as prior policy and litigation to form one dialogue and use Faircloughian organizational relationships that form the modern creation of auto usage.

Moving beyond the broader transportation applications into specific discourse struggles between transit and the private automobile, discourse analysis provides an excellent means of

64

understanding a narrower approach to planning as well as land use. In this case, discourse analysis enables a better comparison between the different types of land use approaches. It can shed light into the different objectives and approaches of relating to transportation in different environments. In particular, Skillington's 1998 study of 55 *Irish Times* articles to discover the structural power relations in the redevelopment of Dublin's city center. In this case, study of Dublin; the opposing parties were those who supported private transport infrastructure and those wanting an increase in the quality of service of public transportation (Skillington, 1998, p. 458). This approach can be expanded to include the differences due to new fuel restrictions.

Furthermore, Skillington provides a framework in developing potentially opposing parties such as established organizations which to keep current transportation patterns and those who wish to have more modal choices in order to identify the dominant discourse. In Dublin, the discourse progressed, and several themes including preserving urban heritage, improving the quality of life, furthering science and economics arose (p. 458). The topic of environmental protection was missing, and its absence was a reflection of the dominant discourses. It is likely that U.S. transportation excluded some elements of various discourses dominating the development. Basically, Skillington's analysis displays how the discourse and its underlying ideology socially constructed the city of Dublin. From this framework, she also considers social actors, or those who played a significant role in the discussion. Most urban policy documents are intended to communicate a particular version of the policy process in a linear and systematic fashion. (Jacobs, 47).

Within the larger issues of marketing of automobiles, this paper narrows the focus to the values communicated by automobile manufactures to consumers. These values manifest in the print advertisements and become a driving force behind automobile dependence. In particular,

rural values are both heavily utilized within marking and are extremely effective in reach a

common value system that is both real and perceived. Furthermore, rural values are applicable

within any land use form, including urban environments whereby the urbanites seek to escape

the city and find the "purer" rural life. The discourse provided by the manufacturer's

advertisements offers a glimpse into how the automobile industry attempts to connect with the

potential consumers. The industry intentionally communicates certain values by depicting certain

environments in which the vehicle is surrounded by, the angle of the camera, and other

photographic techniques.

Chapter Three: Pilot Studies

Image Analysis Objective

The objective of these pilot studies was to identify a relationship between automobile dependency and the ideology of marketed images of private vehicles. The research project then sought to identify differences in the discourse between different vehicles and identify the underlying automobile dependent ideology. With automobile marketing images, the consumer can initiate the communication by either seeking the information at the dealership or downloading it from the automobile manufacturer's website. In addition, consumers are passively involved within the communication by billboards, TV ads, and by direct mailings regardless of their intent to consume. The link between automobile dependency and automobile marketing has yet to be addressed within the planning literature and this research project sought to begin the planning process by identifying and counteracting the existing dominant mode dependence.

Image Analysis Methodology

This chapter used critical discourse analysis (Fairclough, 1995) to examine differences between the values and lifestyles presented in images marketed to consumers in marketing images of two types of vehicles: sport-utility vehicles (SUVs) and fuel-efficient vehicles (FEVs), as classified by the U.S. Environmental Protection Agency. Critical discourse analysis is the theoretical lens suited to investigating the underlying power and ideology of the marketing media, and content analysis as a method to quantify features of images through themes developed from planning theory. This automobile institution, like other institutions defined by Fairclough (1995) sets its own speech events, settings, scenes, participants, and norms. The institution "facilitates and constrains the social action" (p. 38). The automobile institution

"includes formularization and symbolization of a particular set of ideological representations" that dictate ways of talking based on ways of seeing (p. 38). The "critical" element of the research is to explore the critical elements of how relationships of power replicate and are replicated by ideology (132). In this case, this issue under critique is how the automobile industry depicts and enforces various urban forms based on vehicle type.

In order to identify the ideology, power, and institution within the corpus of manufacturer-produced web images, the analysis drew from three automobile brands; Chevrolet, Toyota, and Volkswagen. The study identified 218 images with 142 images of sport-utility vehicles (SUVs) and 76 images fuel-efficient vehicles (FEV).

Vehicle Classification

SUVs were identified by their classification by the Environmental Protection Agency and classification within manufacturers' websites. The study identified the Chevrolet Equinox, Tahoe, and Suburban as the SUVs for the Chevrolet brand. Representing Toyota were the 4Runner, FJ Cruiser, Highlander, Rav4, and the Sequoia. The Tiguan and Touareg were the SUV representing the Volkswagen brand. The currently debated crossover classification of SUVs with characteristics of passenger cars (or passenger cars with characteristics of SIVs) such as the Chevrolet Traverse, HHR, and the Toyota Venza, were not included in this study.

The fuel-efficient vehicles are represented by passenger cars that are Environmental Protection Agency rated with at least a 30 miles-per-gallon combined rating. The fuel-efficient vehicles analyzed were the Chevrolet Aveo and Cobalt; the Toyota Camry, Corolla, Prius, and Yaris; and, the Volkswagen Jetta and Jetta Sportswagen. However, Toyota and Volkswagen both produce hybrid and diesel passenger cars that are a variation of a gasoline-only model which do not attain the 30 miles-per-gallon rating. The more fuel-efficient model such as the Toyota

Camry Hybrid and the Volkswagen Jetta TDI are not distinguished as separate vehicles within the manufacturers' websites. Thus, images of non-FEV vehicles were mixed with the FEV. This study placed all images of the Camry and Jetta model within the FEV category since these vehicles were represented within the same webpage.

Interpretation of Images

The images were downloaded electronically from the photo gallery on the automobile manufacturers' websites. Excluded images were extreme close-up images such as an image of only an alloy wheel or sunroof. In addition, the research excluded images that were altered electronically to show two distinct images within the same file. Only images from the most recent vehicle model as of May 15, 2009, were included.

The analysis of the visual images is based upon Sturken and Cartwright (2001) for a theoretical approach to image analysis. The visual units of analysis will be based within planning literature as well as a visual grammar provided by Kress and van Leeuwen (1996). Planning-based units of analysis include visual land use such as an urban, suburban, rural, or wilderness backdrop. Visual land use density of the image is the setting the image represents. In this case, the setting accounts for natural scenes that are untouched by humans, humanized landscapes which are natural looking but are ultimately altered my human activity such as gardens or parks, and human-made synthetic environments which include little The analysis of the visual images are based upon Sturken and Cartwright (2001) for a theoretical approach to image analysis. The visual units of analysis is based upon based within planning land use form, defining features of vehicle class defined by federal regulation as well as elements of visual grammar provided by Kress and van Leeuwen (1996). Land use units of analysis included visual land use such as an urban, suburban, rural, or wilderness environments in the background of the vehicle. In this case,

the setting accounts for wilderness scenes that are untouched by humans, defined by, humanized landscapes which are natural looking but are ultimately altered my human activity such as gardens or parks, and human-made synthetic environments which include little vegetation and are comprised mostly of concrete, brick, or other man made building material. In addition, the images are coded depending on the nature of the background as being non-descript, fantasy, or realistic. Non-descript backgrounds denote information about the vehicle is surrounding such as a white backdrop or a blurred setting that is unidentifiable to the viewer. Fantasy backgrounds are backdrops that include significant and obvious alterations to the backdrop and include computer generated forms and images such as cartoon characters or landscapes. Finally, realistic backgrounds are actual environments that the viewer determines as being an actual place. In addition, a social inclusion unit of analysis depends on if the image includes other individuals besides the vehicle occupants. This unit of analysis is concerned with whether the vehicle displayed removed from society by displaying "other" people or is the vehicle displayed within a group of people or community. Finally, the images analysis will include whether or not the advertized vehicle is shown interacting with other vehicles. These three units of analysis will indentify and test the traditional concepts of automobile dependency within automobile advertising.

The visual grammar includes unit of analysis such as visual gaze, size of frame, vehicle distance, vertical angles, and dimensions. These units of analysis were developed by Kress ad van Leeuwen to apply to human beings; however, association with identifying human eyes from vehicle headlights enables application of this technique to anthromorphized vehicles. Vehicle gaze is the direction of the vehicle in relation to the viewer. Instead of a face with eyes, the vehicle makes contact with the viewer with the front grill and headlights. A direct gaze provides

the vehicle with a direct connection with the viewer as if heading towards the viewer. On the other hand, a profile or indirect shot of the front of the vehicle is disconnected and passive with the viewer. The size of the frame and social distance can also be applied to a vehicle image. The framing shows how large a vehicle is and denotes dominance over the other items or background within the image. The amount of space the vehicle uses within the image provides an additional level in the concept of automobile dependency. The images depict how auto dependency addresses size, power, and safety of the vehicle, while the distance forces the vehicle to either be withdrawn as part of the scenery in the background or closer to the viewer and dominating or removed from the scenery. The layout analyzes for the centeredness of the vehicle within the image while thee perspective unit of analysis determines the angle in which the camera recorded the imaged as pertaining to the driver's height. Finally, the motion unit of analysis determines whether, not vehicle is static, moving, or the environment is moving while the car appears still.

The coding was performed by two researchers who achieved an inter-rater reliability score of 0.88 for all images and units of analysis, which is significantly above the minimum inter-rater reliability minimum of 0.70. In addition, nine of the ten units of analysis achieved higher than the 0.70 minimum inter-rater score which the exception of vehicle distance (0.63). As a result, the results based on the distance unit of analysis are not reliable enough to base any argument. However, the other nine units of analysis can provide significant reliability to base further analysis. In order to test for independence of the variables, the results of the nine variables were analyzed by a Pearson's Chi-Square Test. The chi-squared test provides the ability to establish a relationship between the variables and allow further research onto the nature of the variables.

Table 1: Inter-rater Reliability

Unit of analysis	Coding Differences	Entries	Error Rate	Inter-rater reliability
Background General	16	218	0.07	0.93
Land Use	25	218	0.11	0.89
Visual Size	52	218	0.24	0.76
Visual Gaze	20	218	0.09	0.91
Inclusion	0	218	0	1
Other Vehicles	1	218	0.01	0.99
Layout	10	218	0.05	0.95
Perspective	40	218	0.18	0.82
Distance	81	218	0.37	0.63
Motion	20	218	0.09	0.91
Overall	265	2180	0.12	0.88

Findings

Considering all variables, land-use showed the strongest relationship (Cramer's V of 0.66) with the type of vehicle portrayed in marketing images. The following sections detail the statistical findings from the visual discourse analysis.

Land Use and Urban Form

Based on the images available at manufacturer websites, there is a statistically significant relationship between the types of vehicle, either an SUV or FEV, and the land use setting. As indicated in

Table 2, SUVs appear in rural and wilderness settings in 68 percent of their sample images as compared to 7 percent of the fuel-efficient sample, whereas the plurality of fuel-efficient vehicles appear in either densely-built environments (47 percent) or no realistic setting (46 percent). The advertizing of models of vehicles addresses and reinforces land-use perspectives of the SUV as a vehicle for dominating nature while the fuel-efficient vehicles belong only in urban areas and utopian fantasies.

Table 2: Vehicle Type and Land Use

Setting	SUV	FEV	Total
Non-descript	13 **9%**	20 **26%**	33 **15%**
Fantasy	0 **0%**	15 **20%**	15 **7%**
Urban	23 **16%**	16 **21%**	39 **18%**
Suburban	9 **6%**	20 **26%**	29 **13%**
Rural	17 **12%**	3 **4%**	20 **9%**
Wilderness	80 **56%**	2 **3%**	82 **38%**
Total	142 **100%**	76 **100%**	218 **100%**

χ^2 test statistic: 11.1
χ^2 **observed = 94.6**
Cramer's V = 0.66 (on a scale of strength of relationship from 0 to 1)

This advertising message tells people in rural, exurban, and suburban environments to buy SUVs because these vehicles connect with the wild natural environment. SUVs have engineering capabilities to handle rugged terrain and individualistic lifestyles of the wilderness, and that engineering corresponds with American ideals of manifest destiny and individualism. The SUV speaks to consumers who seek to escape from the constraints of society and urban environments even if buyers more typically use the vehicle in suburban and urban areas. Ex-urbanites and rural dwellers who live in low-density areas also identify with the land use depicted in SUV advertisements, even though such drivers typically drive long distances; these people also might reject land-use and urban form changes to their communities that fail to conform to the wilderness/isolated images reinforced by multiple advertizing sources. As an underlying irony, SUVs require more petroleum and emit more air toxins than fuel-efficient vehicles, harming the ecologies portrayed and lauded in SUV marketing images.

Fuel-efficient vehicles host their own set of problems within the context of marketing images. The high percentage (46 percent) of FEVs portrayed within a non-descript and fantasy setting is detrimental for connecting within a certain land use ideology or seeing how fuel-efficient vehicles fit in a person's lifestyle. The non-descript location communicates either that the vehicle is "no-where," or the fantasy background communicates a silliness, childlikeness, or unrealistic message. Consumers, especially people who want to identify with a rural or wilderness lifestyle, might view the fantasy backgrounds as reasons not to take fuel-efficient vehicles seriously. When the FEVs are portrayed in realistic scenes, the vehicles are placed within urban (21 percent) and suburban (26 percent) backdrops. Although this portrayal is useful for connecting with urban individuals who identify with the urban lifestyle, the fuel-efficient vehicles do not communicate with rural, exurban, and some suburban values for open roads the wilderness ideal. The consumers who drive the farthest distances are not offered images of how fuel efficiency can fit into their lives.

Identification with Power

There is a relationship between vehicle type and the visual size of the vehicle in marketing images (**Table 3**). SUVs had a higher percentage of oversized and full frame images (28 percent versus 12 percent for FEVs) while FEVs were more likely positioned within a prominent or medium framed shot (83 percent versus 58 percent for SUVs); however, SUVs had a significantly more images in which the vehicle was small within the image (14 percent versus 5 percent). The SUVs are depicted either as larger than life vehicles or as smaller entities fitting into a wilderness background. FEVs are depicted as neither larger than nor smaller than life, which could be argued as right-sizing if people do not perceive vehicles as means of increasing

their personal power. The lack of oversized and full frame images for FEVs connotes that the

FEV cannot compete with the size of the SUV.

Table 3: Vehicle Type and Visual Size

Framing	SUV	FEV	Total
Oversized or Full Frame[◊]	39 27%	9 12%	48 22%
Prominent	63 44%	45 59%	108 50%
Medium	20 14%	18 24%	38 17%
Small	20 14%	4 5%	24 11%
Total	142 100%	76 100%	218 100%

χ^2 test statistic: 7.8
χ^2 **observed = 13.8**
Cramer's V = 0.25 (on a scale of strength of relationship from 0 to 1)

[◊] Categories have been combined to achieve chi-square validity.

Manufacturers and Culture

The analysis revealed a significant difference in culture among the three car companies

examined. Because only one manufacturer was analyzed for each of three countries, it is

impossible to differentiate corporate cultures from country cultures, but the statistics do show

different manufacturers portrayed land use and visual grammar in different ways. Relationships

to land use are depicted in Table 4. The German-based Volkswagen brand depicted more

vehicles within the non-descript or fantasy backgrounds (40 percent) while the Japan-based

Toyota brand focused its largest proportion in rural and wilderness images (63 percent); the U.S.-

based Chevrolet distributed its images among the categories with a leaning toward rural and

wilderness backgrounds (35 percent), though not as substantially as Toyota. Relationships also

exist between the corporate culture/country of origin and the camera perspective (χ^2 observed of

15.97 compared to χ^2 test statistic of 9.49) as well between the corporation/country and the

visual size of the vehicle (χ^2 observed of 18.46 compared to χ^2 test statistic of 15.51). No

significant difference appeared between culture and camera perspective.

Table 4: Country of Origin and Land Use

Setting	USA Chevrolet	Japan Toyota	Germany Volkswagen	Total
Non-descript or Fantasy[d]	8 17%	24 21%	16 40%	48 22%
Urban	11 24%	21 18%	7 18%	39 18%
Suburban	11 24%	15 13%	3 8%	29 13%
Rural or Wilderness[d]	16 35%	72 63%	14 35%	102 47%
Total	46 100%	115 100%	40 100%	218 100%

χ^2 test statistic: 12.6
χ^2 **observed = 21.0**
Cramer's V = 0.22 (on a scale of strength of relationship from 0 to 1)

[d] Categories have been combined to achieve chi-square validity.

Controlling for country of origin for the manufacturer, the relationship between vehicle

type and land use remains strong within each brand. Both the country of origin and the vehicle

type are associated with background land use, and both of these variables might give perspective

into the automobile-dependent ideology represented in the images. The consistency of a

significant relationship across the cultures of manufacturers might result from expectations of the

specifically-targeted American consumer market.

Discussion of Results

While the public clings to automobiles for daily life, the automobile industry influences

social and political perceptions of consumers. Manufacturers can use camera angles to associate

personal power with drivers of certain vehicles, and off-road images can appeal to American

values of rugged individualism. Fantasy backgrounds can be taken as utopian dreams or silly cartoons. The marketing of vehicles and lifestyles shapes and exploits cultural perceptions.

Across all manufacturers, corporations are telling Americans that fuel-efficient vehicles belong in urban markets with short-distance trips, and environmentally-unfriendly and fuel-inefficient SUVs belong on the open road in rural and wilderness areas. This classification transfers to the drivers as consumers identify with the vehicles they use.

Individuals view the vehicles they drive as reflections of themselves, but the aggregate composition of the private vehicle fleet is reflected in societal issues such as air quality, public safety, and ecological health. Marketing that romanticizes private vehicles based on desirable lifestyles, images, and values also contributes to increasing societal dependency on automobiles by instilling the role of private vehicles in consumers' minds. When people communicate, in this case between an industry and consumer, they "tap into commonly held views and ways of thinking about a topic" (Guiver, 2006, p. 235). In turn, the communication itself reinforces a mutual assumption that views and ways of thinking about private vehicles are commonly held.

Marketing provides means for private sector companies to differentiate their products, yet the automobile industry appears to agree on social norms for land use to portray to the American public. No other significant relationship emerged with vehicle type, despite analysis of visual gaze, inclusion of other vehicles, layout, perspective, or motion. On one hand, the lack of a statistically significant relationship between many of the visual grammar units of analysis and vehicle type suggests the different vehicle types are not communicating a different ideology based on gaze, layout, and motion. On the other hand, the lack of a relationship furthers the strength that the background land use and framing of images are strong influences on the depiction of automobile dependency ideologies.

There are a few exceptions to the trends in the data. The Toyota Highlander and Chevrolet Equinox SUVs were not portrayed as wilderness warriors; rather, both vehicles accounted for most of the SUV vehicle type's portrayal within an urban and suburban setting. One potential reason for these two vehicle's difference from their SUV counterparts is that the Highlander is available in a hybrid model and thus attempts to connect with urban individuals who want an SUV with better fuel economy. The Equinox, being the smallest Chevrolet SUV with the better gas mileage, might attempt the same message with urban consumers, but does so without a hybrid model. In addition to the urban SUVs, there was a notable difference in the number of images based on the vehicle type. Although there were more SUV models than FEV models, the number of SUV images per model was significantly higher than the FEV. SUVs averaged 12.9 images per model while FEV averaged 9.6 images per model. The relevance of this difference is not yet clear but it is an interesting anomaly that might merit further research.

Pilot Study Conclusion

There is a need to change the cultural perspective to one that sees value for more fuel-efficient vehicles even among those who have more financial freedom when purchasing a vehicle. This research study has shown a relationship between vehicle types and the settings in which each type fits. In addition, a relationship exists between other variables such as the culture, visual size, and the perspective of the camera angle. The values communicated through marketing reach beyond the act of purchasing a vehicle into other aspects of society through the aggregate effects of automobile dependency.

While traditional approaches seek to alleviate automobile dependency through land use, the automobile industry is simultaneously advertising a different set of values that people take with them to the vehicle showroom and to political polls. The ads sell the wilderness, size, and capacity rather than fuel economy, population density, and balanced mode choices. While it might seem obvious that the automobile industry sells a form of automobile dependence, the industry is reinforcing and reconnecting with values held by the greater public. The values of the public drive the planning and land use discussions that are strongly influenced by the advertising campaigns across many media (TV, radio, the internet, and so forth). It becomes difficult to promote an alternative transportation approach when the public is inundated by a different ideology.

Greater responsibility needs to be taken in messages to the public. Planners and other transportation professionals must address how to counteract assumptions and values presented within the mass advertising of automobile media. For instance, the images of SUVs over-emphasize the need for off-road and wilderness capacity despite poor fuel economy. How many people who drive SUVs need their all-terrain capabilities more than once a year, if ever? Activist

groups or the public sector can use the findings of this study to produce targeted public service messages to help the public gain a more balanced perspective. Automobile manufacturers might also use the findings to consider opening new markets. Would bad for the auto industry if exurbanites learned to see value in buying hybrids to traverse their long daily distances?

The next step in the research is to characterize the identified relationships between types of vehicles, culture, visual size, and perspective. In addition, this study only looked at automobile advertising as relating to the automobile dependent lifestyle. It does not provide an alternative mode, but looks at a smaller shift that can lead to improve balance within automobile culture rather than the full transportation system. Here, the transition from the dominant SUV values to fuel-efficient values changes the nature of how automobile dependency interacts with the public. As the next more ambitious step, the values associated with smaller vehicles might be values more closely associated with walking, biking and transit.

Brochure Analysis

Analysis Methods

This chapter utilized critical discourse analysis to examine differences between the values and attributes presented in the images marketed to consumers in web-based marketing campaigns of light-duty trucks. Like the previous chapter, critical discourse analysis is the theoretical lens suited to investigating the underlying power and ideology of the marketing media, and content analysis is a method to quantify features of images through themes developed from theory involving CAFE standards (*14*).

This study of vehicle information selected three Chevrolet vehicles; the 2010 Impala, 2010 Tahoe, and the 2010 Silverado as the investigative samples for this study. The 2010 Chevrolet Impala is a full-size passenger vehicle and the 2010 Chevrolet Tahoe and Silverado are full size light-duty trucks, according to CAFE classifications. The three vehicles represent the range of vehicles types commonly identified by the average consumer as a passenger car (Impala), a sport utility vehicle (Tahoe), and a pick-up truck (Silverado). In addition, the 2010 Tahoe is similar in physical features to the pre-CAFE model Impala/Caprice Wagon in length, cargo capacity, engine size, passenger capacity and width; the Impala/Caprice was considered a passenger vehicle. The only physical discrepancy between the 2010 Tahoe and pre-CAFE Impalas is the ground clearance and vehicle height. This study selected Chevrolet because the marketing material was similar among the three vehicles, and all three of the vehicles were consistently in the middle of their model lifecycles: the current model of the Impala was released in 2006 and both the current model Tahoe and Silverado were released in 2007. Chevrolet is not alone in producing full-sized passenger vehicles and light-duty trucks. Ford, Chrysler, Toyota, Nissan, and Volkswagen produce similar vehicles that could provide additional examples.

Chevrolet was selected because the other manufacturers' vehicles were not released in as short of a time span, with some vehicles recently released or at the end of their product life span. Chevrolet provided a compact example of vehicles developed at about the same point in time with similar formats in advertising campaigns.

For each vehicle, this study analyzed the downloadable vehicle brochure available on the Chevrolet web site (http://www.chevrolet.com/pages/mds/helpcenter/downloadBrochure.do.) These brochures were identical to the brochures available at dealerships. The study analyzed each page, both text-based pages and image-based pages. The analysis was separated according to whether the page was a full image consuming the entire page or a page that included text. Often pages with texts were accompanied with smaller images set into the page. For this study, those images were not included within the study due to issues of ensuring the same weight an image can carry. A full page image might carry more emphasis and the smaller images did not differ from the theme of the texts. Only full-sized images were included. In addition to the textual and image analysis, the study pulled out significant statements made within the brochure to illustrate manufacturers' messages to consumers.

Constructs and Thematic Units

In this case, the construct of concern was the themes of advertising material, specifically which of the possible themes appeared for each different vehicle classification. To operationalize this construct, the following three themes forming fifteen categories were developed from the National Highway Traffic Safety Administration's (NHTSA's) vehicle classifications identified in the final rule (49 CFR Parts 523, 531, 533, 534, 536 and 537) as well as units identified from marketing literature. It is important to note that the classification system might change as two-

wheel drive SUV and minivans might be redefined as passenger vehicles in the future (*15*). However, this study will maintain the current definition that a passenger vehicle is:

> "any automobile (other than an automobile capable of off-highway operation) which the Secretary [*i.e.*, NHTSA] decides by rule is manufactured primarily for use in the transportation of not more than 10 individuals" (*15*)

Light-duty vehicles are defined as "not being manufactured "primarily" for transporting up to ten individuals; and... those expressly excluded from the passenger category by statute due to their capability for off-highway operation, regardless of whether they were manufactured primarily for passenger transportation (*15*).

The problem of this classification is the "off-highway operation" exception. Because traditionally passenger vehicles can operate off of the highway or paved environments, this study will look for the demonstration of extreme capabilities of off-highway operations. As a result, a vehicle placed in an off-road environment must also have demonstrated some capacity specific to overcoming a significant environmental barrier. In addition, the themes were modified as details emerged from the data set itself, such as any awards or accolades the manufacturer wanted to share with consumers. Finally, the study added a general information category where several categories were interwoven and were problematic to classify. As a result, the general information category is classified as neutral due to multiple statements.

Textual Themes

- Passenger Vehicle Themes
    - Interior Comforts/Luxury Items
    - Seating Capacity
    - Fuel Efficiency
    - Family Units
    - Ride-quality (not off-road related)
- Light-duty Truck Themes
    - Off-road capacity
    - Cargo capacity
    - Towing
    - Non-passenger oriented amenities
    - Utility, work, or productivity features
- Neutral Themes
    - General Information
    - Safety/Accident Avoidances
    - Warrantee
    - Legal Information
    - Accessories or vehicle options

Image Themes

The images for each vehicle were broken down into six possible categories. Five of these categories dealt with the vehicle settings and their relationship with potential consumer use. Because all vehicles with off-road capacity are officially classified as light-duty trucks regardless of whether their primary purpose is to carry up to 10 people, the emphasis of the image analysis focused on the terrain in which the vehicle was presented to the consumer. The "on-road" and "pavement" categories were developed as passenger-vehicle themes. There were two different off-road type of images. The first type of off-road picture could be described as a glamour image where the vehicle was perfectly clean, including the tread of the vehicles tires, and was set in a pristine natural environment. While the vehicle was displayed in an off-road setting, it was not displaying any off-road capacity. The wilderness backdrop was just a showroom for the vehicle. The "off-road not in use" images were labeled as a neutral theme without vehicle designation while the vehicles portrayed "off-road in use" were labeled as having a light-duty truck theme.

The second "off-road in use" category displayed the vehicle in an off-road setting while also in use or displaying an off-road capacity. Non-descript images were considered neutral because of the inability to ascertain whether or not the vehicle was on a paved or off-road surface. Finally, the "interior category" is the only category that was not focused on the off-road capacity. The interior images were assumed to highlight passenger amenities and thus assumed to be passenger-vehicle focused. As a result, interior images of the vehicle were labeled as a passenger-vehicle theme. Images of accessories or consumer options were not included in the image analysis.

- On-road - An image of the vehicle that is clearly being operated on a road or highway
- Pavement - An image of the vehicle on a paved surface, just not identifiable as a highway
- Off-road not in use - An stationary image of a "posed" vehicle on a non-paved surface
- Off-road in use - A image of a vehicle in use or portraying the vehicle be used for a purpose
- Non-descript - A image of a vehicle in an unidentifiable or non-descriptive location
- Interior - An image of the interior of the vehicle

Table 5: Example of Image Analysis Classification

Impala	Tahoe	Silverado
On Road	**Off-road not in use**	**Off-road in use**

Findings

The textual analysis revealed that the Impala and Tahoe were portrayed as having similar functions with similar small numbers of total advertising pages and similar numbers of themes, as indicated in Table 6. The Silverado marketing was different with a greater number of total pages and the most diverse distribution of themes. Because marketing of all vehicles had dedicated a few pages to safety, warrantee, and legal information, the neutral theme was the most numerous; however, the most significant finding was what was silent in the Tahoe text: the expected light-duty truck themes. Light-duty truck themes were absent in both the Impala and Tahoe text. While it might be expected for the passenger vehicle not to have light-duty truck themes within the text, it is not expected for the light-duty truck to be devoid of light-duty truck themes. In comparison, the Silverado had several light-duty truck themes and a few passenger vehicle themes, but it was overwhelmingly focused on the non-passenger utility and some off-road capacity. The Impala and Tahoe were marketed as passenger vehicles when compared to the Silverado.

Table 6: Theme Distributions in Marketing Texts

Vehicle Text Analysis	Impala (passenger car)		Tahoe (sport utility vehicle)		Silverado (pickup truck)	
Passenger Themes	2	28.6%	3	37.5%	4	16.0%
Light-Duty Truck Themes	0	0%	0	0%	7	28.0%
Neutral Themes	5	71.4%	5	62.5%	14	56.0%
Total Textual Themes	**7**	**100%**	**8**	**100%**	**25**	**100%**

In addition, the titles on some of pages enforced the perception that the Impala and Tahoe were to intend to be used as passenger vehicles (Table 7). Both the Impala and Tahoe emphasized luxury while the Silverado focused on the utility and practicality of the interior space. The Tahoe focused on its capacity to carry passengers and prominently displayed an award as "Best New Family Vehicle". There might not be a bigger claim for use as a passenger vehicle than marketing towards the family unit. The off-road capacity of the Tahoe or the act of off-roading was not used as a heading, but the Silverado clearly included headings for off-road capacity and use of non-passenger uses as a primary purpose for the vehicle.

Table 7: Page Titles for Marketing Materials

Impala (passenger car)	Tahoe (sport utility vehicle)	Silverado (pickup truck)
Luxury for all	2009 Best new family vehicle	Getting hitched is serious business
A fine balance between performance And fuel efficiency	A lot of luxury for a lot of people	Road trips are good. Off- road trips are better

The results of the image analysis mirrored textual analysis (Table 8). The Impala's images contained strong passenger-vehicle themes. The Silverado was a diverse mix of both passenger themes and light-duty truck themes. It maintained a work-oriented representation and most images were off-road in use; however, out of all the Silverado's images, ten out of thirteen displayed the four-door version of the pickup truck, so even with strong light-duty truck themes,

the near exclusive use of the extended and crew cab version of the truck might warrant further exploration.

The Tahoe differed from the results of the textual analysis. The Tahoe featured a significant number of "off-road not in use" images as well as a few non-descript, on-road and off-road in use images. As a result, the nature of the vehicle as a passenger vehicle or light-duty truck was muddled in the visual communication; however, with strong textual message as a passenger vehicle, the Tahoe's marketing still portrayed a passenger-oriented vehicle without off-road claims.

Table 8: Image Analysis Results

Vehicle Image Analysis	Impala (passenger car)		Tahoe (sport utility vehicle)		Silverado (pickup truck)	
On-road	1	20.0%	1	14.3%	0	0.0%
Pavement	2	40.0%	0	0.0%	2	15.4%
Off-road not in use	0	0.0%	3	42.9%	3	23.1%
Off-road in use	0	0.0%	1	14.3%	5	38.5%
Non-descript	0	0.0%	1	14.3%	0	0.0%
Interior	2	40.0%	1	14.3%	3	23.1%
Total	5	100.0%	7	100.0%	13	100.0%
Passenger Themes	5	100.0%	2	28.6%	5	38.5%
Light-Duty Truck Themes	0	0.0%	1	14.3%	5	38.5%
Neutral Themes	0	0.0%	4	57.1%	3	23.1%
Total Textual Themes	**5**	**100.0%**	**2**	**28.6%**	**5**	**38.5%**

Overall, the marketing analysis provided evidence that vehicle marketing is confusing the message of which vehicles should fit in which CAFE classifications. Advertising for the sport utility vehicles more closely approximated marketing for the passenger car than the pickup truck, yet the sport utility vehicle is not subject to the emission controls intended for passenger vehicles.

Relevance to Research

This research study has provided statistical evidence from national data to clarify many long-standing claims about what fuel efficiency can do and has done. It has also illustrated the shift away from passenger cars toward light-duty-trucks. Moving beyond showing quantitative trends of this mode shift, the research provided a preliminary indication of why that shift might have happened by examining one manufacturer is marketing messages to consumers. Some findings are not to be generalized to the entire automobile industry without further research into other manufacturers and more than three vehicles.

The intent of this project was to identify that marketing of vehicles might not align with CAFE classification. It is hoped this research will encourage future research into the truth in advertising between marketing messages and NHTSA classifications. Future research is highly recommended, especially in anticipation of likely changes to the classification of vehicles, especially two-wheel-drive sport utility vehicles. This project identifies the potential variables and notes an area of CAFE research that requires further research.

As CAFE standards are revisited, policymakers are encouraged start looking at intended use rather than structural characteristics to classify vehicles. There should be some consideration to align marketing and policy regulation. The usefulness to practitioners is to add an additional perspective to CAFE classifications outside of the goal to achieve better fuel efficiency.

Conclusions

CAFE standards are getting renewed attention in light of greenhouse gas concerns, yet many of the claims surrounding fuel-efficiency standards do not stand up to analysis of the data. Increases in vehicle miles traveled do not correspond with increases in fuel efficiency. In fact, CAFE seems to have made minimal impact on the efficiency of the overall American fleet, but they have provided a loophole for vehicle classification and more importantly vehicle perception and consumer choice. The policy intentions of the CAFE classifications are not matching consumer use of vehicles. Part of the problem appears to lie in the shift away from private vehicles and toward light-duty trucks being used as passenger vehicles without the same regard for fuel economy.

The vehicle manufacturers are taking advantage of the ability to sell light-duty vehicles as passenger vehicles because the policy provides the private market incentive. It is clear the manufacturers know what they are doing because the messages communicated when they advertise light-duty trucks as passenger vehicles do not match the official classifications attained for CAFE purposes. If a manufacturer is going to avoid the more stringent CAFE standards of the passenger vehicle classification by making light-duty trucks, then the marketing of light-duty trucks should not portray vehicles as passenger vehicle or as substitutes for a passenger vehicle. Truth in advertising has not been checked against truth in classification. The other alternative is to remove the separation or difference in the fuel efficiency standards between light-duty trucks and passenger vehicles and set a single standard for all consumer-oriented vehicles.

Currently, Federal regulations classify according to the physical attributes of vehicles; however, this structural approach does not accurately represent vehicle end-use, but knowing the end-use in impractical for CAFE regulation. Rather, the study focus on that the manufacturer suggests to the consumer what the appropriate use of the vehicle should be when they purchase

90

the vehicle. The light-duty truck classification has allowed CAFE regulations to be less effective in continuously increasing the nation's fuel efficiency. Jumps in fuel efficiency are more of a reactionary event rather than steady progression resulting from policy enforcement. In the beginning of CAFE, regulations of the separation between light-duty trucks and passenger vehicles were permissible because passenger vehicles represented a substantial majority of sales and preference for consumer vehicles. The policies need to be updated because over time, the light-duty trucks slowly became a norm for consumers for their use as a passenger-oriented private vehicles. There will be another issue potentially as pick-up trucks now commonly equipped with four doors and seating for five.

Automobile Advertising and the Urban/Rural Divide

In the third pilot study, elements of both the image study and the brochure study were incorporated to address how brochures distributed textual themes and image themes based on different vehicle types. The main focus was the land-use form communicated from the manufacturer to the consumer. In addition, some fuel economy themes were inserted within the textual analysis to determine if there was any connection between land use and fuel economy. The objectives of this pilot study were to refine the textual analysis as well as to characterize the urban/rural message and ideology of vehicle marketing and to evaluate how the differences in the discourse of vehicle types interact with American urban and rural transportation values.

Method

The approach to the vehicles brochures was the hybridized content analysis and critical discourse analysis. This study built upon the method and approach of the previous studies. Vehicle selection for this study was based on fuel economy. The vehicles were selected and divided into two groups: fuel-efficient vehicles and light-duty trucks. Fuel-efficient vehicles are defined by the distinction of passenger cars rated by the Environmental Protection Agency (EPA) for greater than 30 miles per gallon (MPG) combined (city-highway). The study excluded trims/variations of less efficient models such as the Ford Fusion Hybrid, Volkswagen Jetta TDI (diesel). Light-duty trucks selected are defined by the National Highway Traffic Safety Administration (NHTSA), preferably with fewer than 20 MPG combined. As a result, the corpus of text comprised of 23 vehicle model brochures ranging from 2010 to 2012 vehicle model years. The distribution between fuel-efficient vehicles and light-duty trucks resulted in a split of fifteen fuel-efficient vehicles and eight light-duty trucks. The vehicles included are listed in Table 9: Fuel-Efficient Vehicles and Table 10: Light-duty Trucks

Table 9: Fuel-Efficient Vehicles

Company	Model	MPG	Year
Chevrolet	Volt	93/37	2011
Chevrolet	Cruze	33	2012
Ford	Fiesta	33	2011
Ford	Focus	33	2012
Honda	Insight	41	2011
Honda	Fit	31	2011
Honda	CRZ	37	2011
Lexus	CT 200H	42	2012
Lexus	HS 250h	35	2011
Mazda	2	32	2011
MINI	Cooper	32	2011
Smart	Fortwo	36	2010
Toyota	Yaris	32	2011
Toyota	Prius	50	2011
Toyota	Corolla	31	2011

Table 10: Light-duty Trucks

Company	Model	MPG*	Year
Chevrolet	Avalanche	17	2011
Chevrolet	Silverado	18	2011
Chevrolet	Suburban/Tahoe	17	2011
Ford	F-150	18	2011
Ford	Ranger	20	2011
Toyota	Tundra	17	2011
Toyota	Tacoma	20	2011
Toyota	Sequoia	15	2011

The themes were developed from the literature particularly the themes developed by Tansley et al. (1990) for their cross-cultural study. Major differences to previous pilot studies included the theme "production" within the image analysis that was used by Tansley et al. The other differences between this pilot and other studies were the increased division between the

textual constructs. As a result, themes like trip-purpose were divided into more specific themes

such as commuting and escape. The breakdown of the thematic units are as followed:

- *Image* constructs and thematic units
    1. Environmental form
        - Urban (urban or suburban)
        - Rural (rural or wilderness)
        - Non-descript
    2. Production
        - Factory/office
        - Resource production
        - Leisure
- *Textual* constructs and thematic units
    1. Trip purpose
        - Utility
        - Production
        - Flexibility for different uses
        - Escape (recreation)
        - General Commuting
    2. Comfort and style
        - Comfort/luxury
        - Sporty/speed
        - Off-road capability
        - Friendly fun
        - Strength
    3. Ecology
        - Fuel economy
        - Low emissions
    4. Built environment
        - Urban
        - Suburban
        - Rural

Findings

Much of the results of this pilot study followed with the finding of the previous image

analysis. Fuel-efficient vehicles were overwhelmingly urban while the light-duty trucks were

rural (see Table 11: Pilot 3 Images). In addition, most light-duty trucks were heavily tied to both

production and leisure while the fuel-efficient vehicles were nearly absent (see Figure 4:

Production within Images).

Table 11: Pilot 3 Images
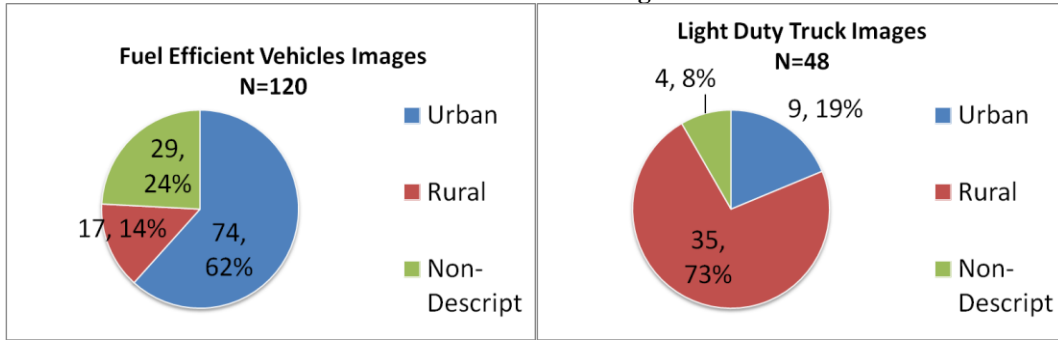
Vehicle	Factory/Office	Production	Leisure
Fuel-Efficient Vehicle	2 1.6%	0 0%	7 5.5%
Light-Duty Truck	1 2%	18 38%	18 38%

Figure 4: Production within Images

However the textual analysis featured mixed results. In some thematic units, there was usable data; however, many units lacked sufficient evidence to draw conclusions from the coded data. Two coding structures stood out; trip-purpose and comfort/style. Both vehicle types were presented differently, but the main difference came down to some simple principles. First, the light-duty trucks were escape /production vehicles, which corresponded with the image descriptions. Second, sportiness and fun were attributes of fuel-efficient vehicles while light-duty trucks focused on off-road activities and power (see Figure 5: Percentage of Brochures with Trip-Purpose and Comfort/Style on the next page).

Vehicle Type	Utility	Production	Flexibility	Escape	Commuting
Fuel-Efficient Vehicle	9 (60%)	1 (7%)	7 (47%)	2 (13%)	2 (13%)
Light-Duty Truck	7 (88%)	5 (63%)	7 (88%)	5 (63%)	0 (0%)
Vehicle	**Luxury**	**Sporty**	**Off-road Capacity**	**Friendly Fun**	**Strength & Power**
Fuel-Efficient	60%	60%	0%	40%	20%
Light-Duty Truck	63%	25%	50%	0%	63%

Figure 5: Percentage of Brochures with Trip-Purpose and Comfort/Style within the Brochures

The two vehicle types also differed when they were coded in a similar usage of utility. For example, a Smart brochure noted the vehicle for a specific use and a specific time of use that is radically different from that of a pickup truck. The Smart brochure said, "You needn't have any qualms about running into town on a Saturday afternoon" (Smart Passion For-two Brochure) while the pick-up truck noted all day utility, "Sunup to sundown is a good start…Even the interiors are custom-made for workers" (Chevrolet Silverado Brochure). On the issue of comfort and style, large trucks featured as many luxury related themes as fuel-efficient car. Thus the common theme relating in the brochures is that the light-duty trucks do the same generalist transportation related necessities that fuel-efficient vehicles offer but the trucks also offer productivity. Offering both productivity and mobility was an important for rural consumers within Kline and Pinch's social construction of technology approach.

While the brochures offered insight into the purpose and utility of the vehicles, ecology and urban form within the text was not as productive usage of the coding scheme. With the ecology construct, all but two vehicles (Smart Passion For-two and the Toyota Sequoia) included some ecological theme. One significant difference was that fuel-efficient vehicles discussed tail-pipe emissions while large trucks did not, but overall the two vehicle types split in their environmental message. Fuel-efficient vehicles are low impact vehicles while light-duty trucks are the vehicles in which a person can access nature. However, Toyota did give a disclaimer with their off-road vehicles stating, " "Toyota encourages responsible [off-road] operation to protect you, your vehicle and the environment." Otherwise driving across wilderness areas was a common theme within the light-duty truck materials. Within the built environment theme, only the three smallest vehicles mentioned any type of urban form. The Honda Fit, the Smart Passion, and the Toyota had very urban statements such as "A city's greatest champion" (Honda Fit) and

"You don't even want to know how much an apartment this size in Manhattan would cost"

(Toyota Yaris). As a result of an otherwise silent category, the message about the urban form

within a vehicle brochures lies within the images and not the text.

Conclusions

The finding supports the concept that fuel-efficient vehicles are urban vehicles while

light-duty trucks are rural. While both vehicles offer specific trip-purposes and utility, fuel-

efficient vehicles have utility but not productivity. The utility is focused on being "around town"

rather than for specific tasks. Light-duty trucks have both utility and productivity and this is

centered on work and recreation. Generally fuel-efficient vehicles are less practical and more

whimsical. The style and comfort themes suggest that fuel-efficient vehicles are "fun and

friendly" but on the other hand light-duty trucks are comfortable but serious. The "seriousness"

also carried on into the environmental message. Light-duty trucks were serious environmental

access vehicles with their off-road capacity while fuel-efficient vehicles were detached from the

wilderness environment appealing to the concept of reducing impact and not a environmental

access them.

This analysis reveals that vehicle marketing is contributing to the discourse that socially

constructs vehicle type relating to urban scale. Fuel efficient vehicles are displayed in urban

environments; trucks are for rural environments. The utility of fuel-efficient vehicles is not

extended to rural areas. It is difficult for any consumer product to be adopted by a specific

population if it does not connect with the values and attributes of the market segment. Kline and

Pinch (1996) showed how rural populations were historically persuaded to adopt the automobile

and those same themes still hold true. A vehicle cannot just be for commuting and urban luxury

trips. The vehicle must be versatile, adaptable, and relate to the rural employment and economy.

Chapter Four: Methodology

The objective of this research is to 1) characterize the message and ideology of vehicle marketing to inform a portion of the American mobility discourse and 2) evaluate how the differences in the discourse of vehicle types interact with American values. In order to achieve these objectives, this study identifies and disassembles components of vehicle brochures and identifies themes and ideology using content analysis through the lens of critical discourse analysis. This study addresses both textual messages within vehicle brochures as well as images within the documents. Both the text and the images communicate in slightly different means, and as a result, this study has developed different coding themes for both the image and textual analysis.

The research design, including data collection and analysis, follows Huckin's (2004) and MacNealy's (1999) definition of content analysis and discourse analysis. Huckin and MacNealy's approaches focus on categorizing data to assess and evaluate the large amount of information in document research. The goal of this process is to identify patterns and to explain empty categories. Huckin labels empty categories as manipulative silences and Long and Bridge (2004) terms them symbolic annihilation.

The research project blends both quantitative elements of content analysis with qualitative critical elements of critical discourse analysis. The quantitative statistical analysis searches for significant statistical difference between vehicle type, manufacturer, country of origin based on land use, CAFE classification, and automobile dependency. The results of the variables analysis are then tested for independence using Pearson's Chi-Square Test. The chi-squared test provides the ability to establish a relationship between the variables and allows further research onto the nature of the variables. In addition, the analysis will correlate these

variables where the relationships exist in order to provide a pattern. The statistical analysis will compliment the critical element of the discourse analysis and offer additional rigor to the critique.

Vehicle Selection and Classification

The analysis draws from a total of seven automobile manufacturers and fourteen vehicle brands. Most manufactures have a full or nearly full lineup of vehicles including a wide range of passenger vehicles, pick-up trucks, and sport-utility/crossover vehicles. All manufactures have a full size pick-up truck represented in their line-up. The seven vehicle manufacturers analyzed for this report comprise of 85.4 percent of the U.S. automobile market as of June 2011 sales (Wall Street Journal, 2011). In addition, no other manufacturer not included within the seven selected makers holds at least 3 percent of the vehicle market. The manufacturers and their respective brands are detailed on the graph on the next page.

Brand	Compact Truck	Full Size Truck	Mid/Large SUV	Crossover	Small PV	Mid Size PV	Large PV	Alternative Fuel PV
Chevrolet	Colorado	Silverado	Tahoe	Equinox	Cruze	Malibu	Impala	Volt
Cadillac*			Escalade	SRX		CTS	DTS	
Ford	Ranger	F 150	Explorer	Edge	Focus	Fusion	Taurus	
Lincoln*			Navigator	MKT		MKZ	MKS	
Dodge	Dakota	Ram	Durango	Journey	Caliber	Avenger	Charger	
Chrysler*						200	300	
Toyota	Tacoma	Tundra	Highlander	Venza	Corolla	Camry	Avalon	Prius
Lexus*			GX	RX		IS	GS**	CT H*
Honda	Ridgeline		Pilot	Crosstour	Civic	Accord		Insight
Acura*			RDX	ZDX		TSX	RL	
Nissan	Frontier	Titan	Pathfinder	Rogue	Sentra	Altima	Maxima	
Infinity*			QX	EX		G	M	
Kia				Sorento	Forte	Optima		
Hyundai*				Tucson	Elantra	Sonata	Genesis	

Figure 6: Vehicle Model Brochures used for this Study
* Indicates brands that were considered the "luxury" brand of the manufacturer
**Automaker makes two models that were acceptable for this category and the study used the least expensive of the two or more models

Select vehicles pertaining to a specific classification sold in the U.S. under the 13 brands were analyzed and incorporated within the sample of texts and images. The brochures of these vehicles provided by the manufacturer's website constitute the corpus of the material. The brochures were archived electronically and coded by three coders. The coding is different for the image and textual analysis for specific themes. The automobiles were separated into two groupings: light-duty trucks and passenger vehicles. The classification of light-duty truck and passenger car are defined by National Highway Traffic Safety Administration. Vehicles, which are exempt from either light-duty truck or passenger vehicle status due to weight or other characteristics, were not be included in this analysis. The newest model available, either 2011 or 2012 models, were included for as long as it is classified by NHTSA and has been tested by the EPA.

Image Analysis Methodology

The image analysis incorporated both content analysis and critical discourse analysis (Fairclough, 1995) to examine differences between the values presented in visual images, such as pictures and graphics of two types of vehicles: light-duty trucks and passenger vehicles as classified by the National Highway Traffic Safety Administration. Critical discourse analysis is the theoretical lens appropriate to investigating the underlying power and ideology of the images, while content analysis was employed to quantify features of images through themes developed from the literature, federal regulation, and the previous pilot studies. Fairclough (1995) identifies that institutions set their own speech events, settings, scenes, participants, and norms. The events, settings, scenes, participants, and norms are expressed within vehicle photographs and graphics. Through these images, the automobile industry is both communicating its norms to the consumer as well as capitalizing on consumer beliefs. For Fairclough, the institution "facilitates and constrains the social action... includes formularization and symbolization of a particular set of ideological representations" that dictate ways of talking based on ways of seeing" (p. 38) and this defines the critical element of critical discourse analysis. Following this theory, the images in the brochure create, enforce, and replicate both industry and consumer mobility values.

Interpretation of Images

The brochures were downloaded electronically in a PDF format from the automobile manufacturers' websites or were coded from print brochures provided by a local dealer. From the brochure, the image were isolated from the page using visual editing software and then coded independently from the text. Excluded images included extreme close-up images where the majority of the photo is displaying a certain feature of the vehicle, such as an image of only an

alloy wheel or sunroof. Once again, only images from the most recent 2011/2012 vehicle model were included.

The analysis of the visual images stems upon Sturken and Cartwright's (2001) theoretical approach to image analysis. The visual units of analysis was based within planning land use form, defining features of vehicle class defined by federal regulation as well as elements of visual grammar provided by Kress and van Leeuwen (1996). This approach follows the design of the image analysis pilot study. Land use units of analysis included visual land use such as an urban, suburban, rural, or wilderness environments in the background of the vehicle.

The images were coded depending on the nature of the background as being non-descript, fantasy, or realistic. Non-descript backgrounds denote information about the vehicle's surrounding such as a white backdrop or a blurred setting that is unidentifiable to the viewer. Fantasy backgrounds are backdrops that include significant and obvious alterations to the backdrop and include computer generated forms and images such as cartoon characters or landscapes. Finally, realistic backgrounds are actual environments that the viewer determines as being an actual place. These three units of analysis will indentify and test the traditional concepts of automobile dependency within automobile advertizing.

In this case, the setting accounts for wilderness scenes that are untouched by humans, defined by O'Niell et al. (2008).Humanized landscapes are those that are rural, suburban and urban which are altered my human activity include gardens, parks, and human-made synthetic environments which include little vegetation and are comprised mostly of concrete, brick, or other man made building material. In addition to the background setting and the physical nature of the surface in which the vehicle is in is important. If the vehicle was coded within a "real" environment, the images for each vehicle were further categorized into four surface categories.

Because vehicles with off-road capacity are officially classified as light-duty trucks regardless of whether their primary purpose is to carry up to 10 people, the emphasis of the image analysis was to focus on the terrain in which the vehicle is presented to the consumer. The "on-road" and "pavement" categories are passenger-vehicle themes whereas off-road themes are light-duty truck themes. In addition, there are two different off-road type of images. The first type of off-road picture could be described as a glamour image where the vehicle was perfectly clean, including the tread of the vehicles tires, and is set in a pristine natural environment. While the vehicle is displayed in an off-road setting, it might not display any off-road capacity, but rather an association with nature. The wilderness backdrop provides a showroom for the vehicle. The "off-road not in use" images are not to be coded as a light-duty truck theme, mostly because any vehicle can be placed in a environment, however if the vehicle is displaying its capacity, that is another matter. The "off-road in use" are to be labeled as having a light-duty truck theme. Simply put, an "on-road" image is an image of the vehicle that is clearly being operated on a road or highway. A "pavement" image is an image of the vehicle on a paved surface, just not identifiable as a highway. An "off-road not in use" image is a stationary image of a "posed" vehicle on a non-paved surface, and a "off-road in use" is an image of a vehicle in use or portraying the vehicle be used for a purpose. In addition, the number of images displaying the interior will be recorded and compared to the number of exterior images to identify any potential difference between light-duty tricks and passenger vehicles.

Coding Scheme:
Image Environment
- Interior
- Exterior
    - Non-descript
    - Fantasy
    - Real
        - Land use
            - Urban
            - Suburban
            - Rural
            - Wilderness
        - Surface
            - On-road
            - Pavement
            - Off-road not in use
            - Off-road in use

The coding of the images will be performed by three researchers who will strive to achieve an inter-rater reliability score of 0.70, which is the minimum inter-rater reliability minimum for significance (Lauer and Asher, 1988, p. 139). In order to test for independence of the variables, the results of the variables will be analyzed by a Pearson's Chi-Square Test. The chi-squared test provides the ability to establish a relationship between the variables and allow further analysis and critique onto the relationship of the variables.

Textual Analysis Method

The textual analysis utilized critical discourse analysis to examine differences between the values and attributes presented in the images marketed to consumers in web-based marketing campaigns of light-duty trucks and passenger vehicles. For the textual construct, this study operationalized two groups of themes: CAFE themes and automobile dependence themes. The CAFE developed themes were continued from the brochure analysis pilot study. It is important

to note that the textual themes were adapted from the CAFE regulations and include some

notable differences. First, interior comfort or luxury items are not considered a factor for

determining vehicle type. However, the interior comfort or luxury of a vehicle is important to

determining the potential use. Vehicles presenting a passenger-oriented use focus on the interior

amenities, thus the comfort to the passengers. Vehicles marketed for the use of transporting

passengers should focus on the amenities of transporting passengers more than those that are

transporting cargo. Passengers care about MP3 connections, DVD players, leather seats, and

Bluetooth. Simply put, comfort matters to people not to cinderblocks or lumber. Passenger

vehicles are expected to discuss comfort at a greater detail than light-duty trucks because of the

intended use. Another significant difference between the CAFE classification and the textual

coding themes is placement of towing as a light-duty truck theme. While CAFE explicitly states

that passenger vehicles are able and expected to be able to tow a various amount of items, this

study focused on towing as a light-duty truck theme. Vehicles focused on towing are marketing a

vehicle for a specific use that is not passenger related. Vehicles are towing items, not people.

Being able to tow does not dictate that a vehicle is a light-duty truck, rather a vehicle designed

and marketed as a towing vehicle for specific purposes is more aligned with the purpose of a

light-duty truck than that of a passenger vehicle.

CAFE Textual Themes

- Passenger Vehicle Themes
    - Interior Comforts/Luxury Items
    - Seating Capacity
    - Family Units
    - Ride-quality (not off-road related)
    - Transport of passengers and passenger related items
- **Light-duty Truck Themes**
    - Off-road capacity
    - Cargo capacity
    - Towing
    - Non-passenger oriented amenities
    - Utility, work, or productivity features

The automobile dependence themes in this study are drawn from common automobile dependent themes identified by Lucas (2008). Themes associated with automobile dependency attributes are:

- Mobility
- Freedom
- Status
- Trip requirements
- Location
- Lifestyle

As a result, the mobility unit of analysis refers to the vehicle ability to move and keep moving the consumer in their daily activities. Freedom is the vehicle's ability to serve as a instrument where the consumer is not reliant on another person or entity for transportation as well as the vehicle's unrestricting capabilities such as "go anywhere, do anything" for example.

Status is any statement that refers to the vehicle that associates with "arriving" or status within a group or society. Status can also refer to rising above social status or limitations as well. Trip requirement refers to attributes of the vehicle that provide the user with either the ability or ease of performing specific trips. Trips carrying three children to soccer practice, traversing a snowy environment, or carrying a canoe are examples of trip requirements. Finally, location and lifestyle are units where the vehicle is presented as pertaining to an existing location or lifestyle of the consumer. For example, a pick-up truck might refer to being a part of the hard working farm location or a hybrid might be claiming an eco-friendly lifestyle. Both of these refer to a location and/or lifestyle that are associated and are potentially reliant on car travel.

Like the image analysis, the textual analysis was coded by three coders with a goal of 0.70 inter-rater reliability. After the data was coded, a statistical analysis identified relationships within the data and the vehicle's CAFE classification. Once the images and texts have been examined, the text and images were combined to characterize and evaluate the extent of automobile dependency in the brochures as well as address discrepancies of the brochure's message and CAFE regulation. The synthesis of the image and textual material combines the two bodies of data to assess how the images and text related to one another as well as to draw conclusions from the comparisons based on vehicle type, CAFE classification, and environment. From the synthesis of the brochures, this research identifies silences within the discourse as well themes and differences in how the manufacturer presents their vehicle to consumers.

Chapter Five: Results

The result of the analysis depicts that there is no significant difference between most vehicles in the text while the images of vehicle do show a statistically significant difference. Vehicles labeled as passenger vehicles and vehicles labeled as light-duty-trucks by CAFE standards show no textual difference with the exception of Large Trucks. The images suggest that the types of vehicles are targeting specific urban forms while the text is stating that both passenger vehicles and light-duty trucks are commuting vehicles. The difference between the passenger vehicles and light-duty trucks is that light-duty trucks can do the same passenger use as a passenger vehicle but offer additional utility, cargo space, passenger volume and general versatility. This lack of difference in the text and the difference in images has significant implications on the type of message sent to the consumer. The light-duty truck becomes the "no compromise" vehicle offering everything while the passenger vehicle is a specific use vehicle, which is the opposite of how CAFE standard intended to regulate the American vehicle fleet.

Inter-rater Reliability

Overall, the inter-rater reliability (IRR) of the coding was strong. The textual analysis, which took the coders between 60 and 80 hours had a total inter-rater reliability of 0.769 with an average inter-rater reliability of 0.764 and a standard deviation of 0.05. Considering the time commitment and coding fatigue, the reliability and consistency were very good. Nearly all categories were in the upper 0.70 range with only a few above 0.80 and below 0.75. The target for this study was 0.70. Only two coding categories, non-passenger amenities (IRR of 0.64) and utility features (IRR 0.69) was below the 0.70 threshold. However, in post-coding discussion with the coders, the coders expressed uncertainty over how to code these two categories separately. As a result, when the non-passenger amenity and utility theme were combined, the

inter-rater reliability rose to 0.81. Many of the error from both of themes were cross-coding error. For example, one coder coded a lockable toolbox as a utility feature while another coded it as non-passenger amenity. Often non-passenger amenities were utility focused. While the study was interested in potential differences between utility related themes as amenities not relating to passengers, the coding instructions for these particular categories was not specific enough to determine a distinction. One additional issue with the coding process was that one coder was asked to recode certain vehicle types. This coder maintained certain perspectives (a bias) that certain brands could not make comfort or luxury claims and as a result, the coder would ignore certain brands. The coder was instructed to recode the brochure and to focus on the text within the brochure rather than their perceived validity of that claim. The result of the recode was acceptable and within the inter-rater reliability target of 0.70.

The inter-rate reliability of the image analysis was strong and the results were very similar to those of the earlier pilot study. The image IRR was quite strong at 0.86. All but one image theme was above 0.70. The one theme that did not fail was images coded as "partial" images of the vehicle. There was significant disagreement (IRR of 0.56) and a great difference in the number of instanced coded between the coders. The high error of the partial category was the result of some coders omitting the images because they felt that the image did not occupy enough of the page while others coded included the partial image. Disagreement in the partial image accounted for 16.1 percent of all error and when partial images are removed from the overall inter-rater reliability, the overall IRR increases to 0.88. As a result, the image analysis considers a scenario omitting the partial images because partial images were not crucial for the study but rather acted as a placeholder for images that were not images of the full vehicle but rather

specific parts of the vehicle. This discussion over the implications of the partial will appear in the image analysis section.

Textual Difference

The brochures showed a considerable amount of textual difference between the vehicle types. The themes used for a vehicle were dependent on the type of vehicle within the brochure. This difference was evident with CAFE related themes, and on a whole there was statistical evidence of difference of automobile dependence themes. When vehicles were tested against vehicles within their own classification, light-duty trucks differed in their marketing material from each other while passenger vehicles have not evidence for statistical difference. When light-duty trucks were compared against passenger vehicles, crossover vehicles did differ from passenger vehicles but SUVs, small trucks and large trucks were statistically different from the four other passenger vehicles. However, only small trucks were different from passenger vehicles when comparing light-duty to passenger vehicles with passenger vehicle themes. The greatest amount of marketing automobile dependence appeared with alternative fuel vehicles when they were compared to other passenger vehicles. Vehicles targeting passenger use expand beyond the passenger vehicle classification into several light-duty trucks.

CAFE Themes within the Text

The vehicles analyzed showed a statistically significant difference in their marketing text, and there was sufficient evidence to determine that there was a difference between the light-duty trucks and passenger vehicles based on all of the CAFE related themes across all vehicle types. However, once the vehicles were classified and compared strictly within their fuel economy groups (either passenger vehicles or light-duty trucks), light-duty trucks differed greatly. While there was no evidence of passenger vehicles differing from other passenger vehicles, light-duty

trucks differed from other light-duty trucks. Both crossover vehicles and large trucks differed from each other and were statistically different from both small trucks and sport utility vehicles. What resulted was a spectrum of light-duty trucks. Crossovers were very similar to passenger vehicles while large trucks were focused on cargo and towing. Both small trucks and SUV appeared to be in-between passenger vehicles and utility vehicles with SUVs leaning towards being more of a passenger vehicle and small trucks being more like their larger counterparts. As a result, there were two different types of light-duty trucks based on how they differed from each other and differed from passenger vehicles. This odd division between the different types of light-duty trucks was apparent when they were compared against passenger vehicles. SUVs, small trucks, and large trucks did differ from the four passenger vehicle categories, while crossovers were unable to provide a difference from passenger vehicles.

Crossovers could not distinguish themselves from passenger vehicles and were significantly and statistically different from the other light-duty trucks. For all purposes, crossover's marketing text suggests that crossover is passenger vehicles and not utility focus light-duty trucks. However, if one looks at strictly passenger themes, only small trucks are different from passenger vehicles. Large trucks, crossovers, and SUVs are not different from passenger vehicles when approaching the marketing material with only passenger themes. With SUV and large trucks, they are marketed as being both cargo and utility vehicles while also being capable passenger vehicles. If material suggests that SUV and large trucks are hybrids, they are not necessary hybrids based on fuel type, but rather hybrids based on intended purpose. They can fulfill both passenger, cargo transport roles while the four passenger vehicles, and crossovers are only passenger oriented.

Table 12: Theme Count

	Alternative Fuel	Small Passenger	Medium Passengers	Large Passengers	Crossovers	SUVs	Small Trucks	Large Trucks	Total
Comfort	20	26	56	61	50	41	9	18	281
Seating	2	1	0	3	8	14	3	5	36
Family	0	2	5	2	8	10	0	0	27
Ride	7	10	22	21	14	15	1	7	97
Transport	6	14	13	19	22	32	10	19	135
Off-road	0	0	0	0	0	10	9	12	31
Cargo	6	6	8	3	12	19	10	24	88
Towing	0	0	1	0	2	15	9	25	52
Non-pass	0	0	0	0	0	2	7	16	25
Utility	0	1	1	0	1	3	4	13	23
Total	63	92	131	124	137	203	75	165	990

Table 13: Themes as a percentage

	Alternative Fuel	Small Passenger	Medium Passengers	Large Passengers	Crossovers	SUVs	Small Trucks	Large Trucks	Average
Comfort	32%	28%	43%	49%	36%	20%	12%	11%	28%
Seating	3%	1%	0%	2%	6%	7%	4%	3%	4%
Family	0%	2%	4%	2%	6%	5%	0%	0%	3%
Ride	11%	11%	17%	17%	10%	7%	1%	4%	10%
Transport	10%	15%	10%	15%	16%	16%	13%	12%	14%
Off-road	0%	0%	0%	0%	0%	5%	12%	7%	3%
Cargo	10%	7%	6%	2%	9%	9%	13%	15%	9%
Towing	0%	0%	1%	0%	1%	7%	12%	15%	5%
Non-pass	0%	0%	0%	0%	0%	1%	9%	10%	3%
Utility	0%	1%	1%	0%	1%	1%	5%	8%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

CAFE Themes: Passenger Themes

When addressing the number of identified themes, the lack of differences between some light-duty trucks and passenger vehicles becomes apparent. In many themes, crossover and sport utility vehicles out market other passenger vehicles for passenger related themes. For instance, both crossovers and SUVs have a greater number of statements coded as seating capacity, family units and transport of passenger and passenger related items. In addition, crossover vehicles and SUVs were more comfort and ride quality oriented than alternative fuel and small passenger vehicles. Overall, all vehicles had at least some claim as a vehicle to transport passengers, however not only do some light-duty trucks make as strong of a passenger use claim as some passenger vehicles, they are making the strongest claim towards passenger use of any consumer oriented vehicle. On a whole, light-duty trucks contained more textual themes than their passenger vehicle counterparts did. Light-duty trucks averaged 16.57 themes compared to the 10.79 themes and had 170 coded themes despite having 3 fewer vehicles than passenger vehicles. There is a significant difference at a 0.99 confidence between the number of themes coded between the two vehicle types.

Comfort

While not a part of the CAFE classification, comfort comes to the forefront for passengers. A set of tools does not care if it rests on leather seats or on a metal bed but the driver or passengers do care about the space, which they are in contact with. As a result, vehicles with a greater emphasis towards comfort and luxury items should be passenger oriented. That assumption that people care about their interior surroundings appears to be supported by the marketing material. Interior comfort and luxury related items were the most identified theme

used within the brochures. In fact, it was coded twice as much as any other textual theme. Passenger vehicles averaged 4.24 comforted related themes per vehicle brochure while light-duty trucks averaged 3.37 comfort related themes. This difference between the recorded comfort themes was statistically significant at a 0.99 confidence.

Assessing the type of vehicle based on the comfort and luxury amenities is reasonable as passenger vehicles marketing were more focus on this attribute. The comfort theme, along with the ride quality theme, was one of the only theme in which passenger vehicles averaged a greater number of coded themes than the light-duty trucks. However, that is not to say that specific light-duty trucks were silent in the comfort argument. Crossovers, SUV, and even large trucks averaged 3.5 or more comfort related themes per brochure. This was greater than the average of comfort related themes for small passenger vehicles. In addition, when the medium passenger vehicles' comfort related themes are greater than a crossovers' by an average of 0.15, there is likely a minimal difference, at best, in the consumer's perception. Only small pickup trucks minimized their comfort related theme. With only 1.5 themes per brochure, it is safe to say that the small truck was the only vehicle not making a strong claim to comfort related items but the argument is still present.

The differences between the distributions of the comfort theme are intriguing with 36 percent of all crossover themes are comfort related and account for 18 percent of all comfort related themes. The 36 percent is greater than both comfort related themes within alternative-fuel and small passenger vehicle comfort themes. In addition, while alternative-fuel vehicles and small passenger vehicles have high percentages of comfort themes (32 percent and 28 percent respectively) both contribute to a very low percentage of the total number of comfort themes recorded.

Table 14: Theme per Vehicle Type

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Comfort (N)	20	26	56	61	50	41	9	18
Comfort Mean	5.00	3.25	4.00	5.08	3.85	3.73	1.50	3.60
Vehicle Percentage	32%	28%	43%	49%	36%	20%	12%	11%
Theme Distribution	7%	9%	20%	22%	18%	15%	3%	6%

However, there is a relationship between comfort and the vehicle price. As price increases, the average number of comfort related themes also increase. There is a small dip in the average comfort related themes for the above $40,000 category, however this is likely attributed to the greater amount of SUV's in relation to large passenger vehicles as half of all the above $40,000 vehicles are SUVs while only two of the 14 $30,000-$39,999 vehicles were SUVs. For the higher two price categories SUV and crossovers accounted for ten of 22 vehicles so price did affect the number of comfort themes but it was not limited only to passenger vehicles.

Table 15: Comfort

Price	Under $20,000	$20,000-$29,999	$30,000-39,999	Above $40,000
Comfort (N)	46	118	66	37
Mean	2.71	3.93	4.71	4.65

In the comfort argument, manufacturers are arguing that the consumer is not sacrificing comfort related items when choosing between passenger vehicles and light-duty trucks. While passenger vehicles might be making a stronger claim towards comfort and luxury related items, the light-duty trucks are not exactly Spartan. The difference between medium passenger vehicles and crossovers is minimal while both SUVs and large trucks make a stronger argument for comfort than small passenger cars. Comfort themes increase with price but that does not exclude light-duty trucks, particularly luxury SUV and crossovers from making a very strong argument

as a comfortable and luxurious vehicle. While there is a significant difference between the luxury and comfort theme, light-duty trucks are not silent in this category but passenger vehicles are silent in other categories. Possessing comfort related amenities does not determine that a vehicle must be a passenger vehicle or the exclusion of luxury items necessitates a light-duty truck, but when comfort amenities are associated with other passenger orient themes, then there is an argument that the current CAFE system is not addressing the vehicles appropriately. CAFE should not doom the driver of a pickup truck to uncomfortable trips while performing a task that requires the attributes of a truck, but when comfort amenities, seating, family units, and other passenger related themes are present, then there should be a realistic likelihood that the vehicle's purpose is that of a passenger vehicle.

Seating

When it comes to seating capacity, there is only one major option - the SUV. Seating capacity of three or more occupants is coded by how passenger occupancy is explicitly stated by the manufacturer. There is a statistically significant difference at a 0.99 confidence that passenger vehicles and light-duty trucks are marketed differently based on seating capacity and it is not how one would assume seating capacity to be distributed. The CAFE regulations explicitly states that seating capacity over 10 classifies a vehicle as a light-duty truck, but no vehicle coded in this analysis had seating for 10 or more passengers. As a result, the exception for vehicles with 10 or more passenger is not applicable for this division for light-duty trucks. Therefore, the result of the seating distribution is problematic. Every single light-duty truck focused on seating capacity more than passenger vehicles. Both the total number and the mean suggest that seating capacity for a light-duty truck is more important than that of a passenger vehicle. SUV and large trucks mentioned seating capacity once or more in every brochure while crossovers were slightly

less vocal. The vehicle marketing as CAFE classification completely breaks down with the seating capacity because the transport of fewer than 10 passengers is a passenger-vehicle related item. Light-duty trucks with less than 10 passenger are supposed to be cargo focused, not seating capacity focused. Now, there is likely some overlap between the seating and cargo space, but seating capacity is not a significant issue for most passenger vehicles and is completely silent for medium sized vehicles. Light-duty trucks are marketing themselves in seating capacity five times to every passenger vehicle markets itself with its seating capacity. This is further complicated with the family and transport of passenger and passenger related items themes as the same pattern follows.

Table 16: Seating

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Seating (N)	2	1	0	3	8	14	3	5
Seating Mean	0.50	0.13	0.00	0.25	0.62	1.27	0.50	1.00

Family Units

Transport of family units is not a common theme but it is a very powerful theme. When it comes to transporting the family, the light-duty truck is king. There is no more important passenger than the consumer's family. Thus when a manufactures make a claim towards transporting family units, it is making the strongest claim to transport passengers. There is a significant difference between passenger vehicles and light-duty trucks (at 0.99 confidence). The problem is that the light-duty truck is the family vehicle and not a passenger vehicle. The marketing of the light-duty truck as a passenger vehicle is not subtle. The Chevrolet Tahoe outright mentions that it is "Top 10 Family Vehicle" (Tahoe/Suburban 2011 Brochure, pg. 4).

Having light-duty trucks be able to transport family members is not an issue in and of itself, rather it is an issue when the other passenger vehicles are nearly silent. SUVs have more coded family themes than all of the passenger vehicles combined. Alternative fuel vehicles are completely silent while the most family oriented passenger vehicle, the medium passenger vehicle, mentions family units only 0.36 times per brochure compared to the 0.62 of the crossover and 0.91 of the SUV. Crossovers and SUVs are nearly 2 and 3 times the family vehicle as the most family marketed passenger vehicle.

Table 17: Family Units

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Family (N)	0	2	5	2	8	10	0	0
Family Mean	0.00	0.25	0.36	0.17	0.62	0.91	0.00	0.00

Crossovers and SUVs account for 18 of the 27 total instances of family units. Pickup trucks did not have a single instance of family within their brochures while only medium passenger vehicles had more than a couple of passing references of family units (5). Both the crossover and SUV explicitly used the transport of family members as a intended use of the vehicle. Take Dodge for example, all their vehicles have a dedicated page for displaying their safety features and yet, only one vehicle, Dodge Journey, directly mentions family units, children in this case. The Dodge Journey is labeled as a "Family Crossover" with seating for five or seven depending on the trim level and is a light-duty truck/SUV according to NHTSA and the EPA. While not as large as other Chrysler mini-vans and built on a mid-size car platform, the marketing material suggests that it is similar in purpose. The Journey is not displayed as a off-road vehicle, never mentioning any off-road capacity within the text and was never displayed in an off-road image or setting. The Journey was shown exclusively within an urban setting. In addition, the Journey has one image with a child walking next to the vehicle while appearing to

hold hands with an adult. There is no other image within any of Dodge or Chrysler's marketing

material that shares the same presentation of children with the vehicle. Within the text, the

brochure states "For children who have outgrown aftermarket child seats, Journey offers dual

integrated child booster seats" (Journey 2011 Brochure, pg. 11). It is unclear if any of the other

analyzed Chrysler/Dodge brochures also have this feature, as it is not marketed as openly as the

Journey. Crossovers and SUVs are family vehicles.

However, unlike the crossover and SUV, both pickup truck groups are completely silent

when it comes to family units. While both small and large trucks have seating capacity and can

transport passengers, they are not focused on transporting family members. Rather, they are

focused on transporting "crews" or production oriented passengers involving employment. This

is an important distinction between the family oriented light-duty trucks (crossovers and SUVs)

with the work oriented pickup trucks as the advertised intended of the vehicle differs

significantly. When a manufacturer markets a vehicle as a family vehicle, the intended use is to

transport family members, thus passengers.

Ride Quality

Ride quality, along with comfort related themes was the only category that was

significant for passenger vehicles. Passenger vehicles and light-duty trucks were statistically

different from each other at a 0.99 confidence. Passenger vehicles, as expected, marketed the

quality of their ride more than the light-duty trucks. Passenger vehicles averaged 1.58 ride

quality related themes per brochures compared to 1.06 for light-duty trucks. However,

crossovers, SUVs and even large trucks did have some argument for the quality of their ride.

This argument for the quality of the ride, which excludes off-road handling characteristics, is

significant when compared with off-road specific handling characteristics. While crossovers do

not advocate the ride quality as much as other passenger vehicles, they are silent like other passenger vehicles when it comes to off-road capability. SUVs on the other hand comment on the ride quality of the vehicle more than the off-road capability of the vehicle (1.36 instances per brochure compared to 0.91 instances). Large trucks have a greater number of off-road instances than they have ride quality instances. Passenger vehicles are much more focused on their on-road ride quality than light-duty trucks but some light-duty trucks, crossovers and SUV brochures, are more focused on the ride quality than the off-road abilities. The results from the ride quality segment created an interesting distinction between the abilities of the different vehicle groupings.

Passenger vehicles were vocal about their ride quality and it was one of their main selling points. Crossovers and SUVs were less vocal about the quality of the ride than passenger vehicles but were more vocal about the ride quality than off-road ability. Finally, while there were some coded statements about the ride quality of pickup trucks, it was not as vocal on this subject as other handling characteristic such as off-road ability. Much like the comfort coding category, with crossovers and SUVs one are not sacrificing a great deal of comfort or ride quality when a consumer chooses a crossover or SUV for passenger use when comparing passenger related selling points.

Table 18: Ride Quality

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Ride Quality (N)	7	10	22	21	14	15	1	7
Ride Quality Mean	1.75	1.25	1.57	1.75	1.08	1.36	0.17	1.40

Transport of Passenger and Passenger Related Items

People travel with other people and their stuff. This is why nearly all vehicles have a truck or rear-storage area. The transport of passengers and passenger related items theme is

defined as a category that focused on the referencing of transporting passengers and their items. This classification excludes family units and references to a specific number of people or seating capacity but it included referencing the driver, friends, coworkers, pets and the ability to carry non-production items such as groceries, sports equipment such as hockey gear and/or kayaks, and leisure activities items. Basically, items not associated with employment or production was included. The result of this classification was surprising, as light-duty trucks were much more aggressive then passenger vehicles. Almost all vehicles mentioned this category at least once per brochure and it was the second highest coded category after the comfort and luxury item category. There were a total of 135 instances in the 73 brochures of transporting passengers and their items. That is 1.85 instances per brochure. However, 83 out of the 135 instances were in light-duty truck brochures. SUVs were coded containing nearly three (2.91) instances of this category per brochure while large trucks were noted at nearly four instance (3.8) per brochure.

Comparatively, the passenger vehicle type with the greatest reference to passenger and passenger related items was the small passenger vehicle, averaging 1.75 instances per brochure. The differences between the passenger vehicle and the light-duty truck were significant at 0.99. While light-duty trucks are classified for their cargo capacity, their ability to transport both passengers and their items is a chief marketing tactic used within the brochures. For example, the Toyota 4Runner (classified as an SUV with a box on frame design) asks the questions "Will my life fit inside 4Runner?" (4Runner 2011 brochure, p. 10). The response to that is that the 4Runner will provide plenty of space for your traveling companions alongside having plenty of rear cargo room and comfort. Now the same argument can be made for passenger vehicles and some similar arguments appear in some of the small passenger vehicle brochures, but the SUV maximizes this argument. It is interesting to note that the crossover vehicle type does not market the transport of

passengers and items as aggressively as other light-duty trucks. While crossovers have the second most total coded statements, the greater number of crossover coded lower the average of 1.67 pages containing the comments per brochure. As a result, the crossovers appear more like the average passenger vehicle while the SUV is something much more capable.

Large trucks were the most vocal about the transport of passenger and passenger related items however, this can be accounted for. While crossovers and SUV were vocal about transporting family units, trucks were vocal about transporting other types of passengers such as work crews, which were coded in this group. In addition, large trucks were also focused on transporting a wide variety of items, some were work or productivity oriented while other were not. The large truck's ability to transport any item was a main focus of the manufacturer. The manufacturer was focused on the large truck to serve as both a work vehicle and a general use transport vehicle acting as a multipurpose tool. In comparison, the SUV was not marketed in the same multipurpose tool manner. It lacked the non-passenger oriented amenities or the utility features that were present in large trucks that will be discussed shortly in a section below.

The transport of passengers and their items is a important capability for consumers. Being able to transport friends or their items is the second most common theme behind the comforts and luxury amenities. As a result, all vehicle types market the ability of the vehicle to transport people and their items. However, SUVs and large trucks are much more emphatic with this feature, particularly compared to the other passenger vehicles and crossover vehicles.

Table 19: Transport of Passengers and Items

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Transport (N)	6	14	13	19	22	32	10	19
Transport Mean	1.50	1.75	0.93	1.58	1.69	2.91	1.67	3.80

Passenger Theme Conclusion

      When it comes to marketing passenger related themes, the brochures suggest that not only are specific light-duty trucks capable people movers but rather they are the better people movers. While passenger vehicles focused on comfort, luxury, and ride quality, light-duty trucks focused on seating capacity, family and the transport of other people and objects. The light-duty truck brochures also had some, albeit fewer, pages containing comfort and ride quality themes. The result is simple, not only are light-duty trucks acceptable substitutes for passenger vehicles, but are the most capable vehicle for families and those transporting people and their stuff. On the other hand, passenger vehicles were surprisingly silent (or nearly silent) within their brochure about seating capacity and transporting family members. In addition, the argument for transporting passengers and passenger related items is much weaker for passenger vehicles when compared to light-duty trucks. If having both ample seating and storage space is important to the consumer, then the light-duty trucks is much more persuasive in its marketing approach. There is no stronger argument for passenger use than marketing for families and other passengers. When consumers are seeking a vehicle that can handle any situation without sacrificing other capabilities, the light-duty truck is much more versatile as a passenger vehicle than passenger vehicle themselves.

Table 20: Passenger Themes

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Comfort Mean	5.00	3.25	4.00	5.08	3.85	3.73	1.50	3.60
Seating Mean	0.50	0.13	0.00	0.25	0.62	1.27	0.50	1.00
Family Mean	0.00	0.25	0.36	0.17	0.62	0.91	0.00	0.00
Ride Quality Mean	1.75	1.25	1.57	1.75	1.08	1.36	0.17	1.40
Transport Mean	1.50	1.75	0.93	1.58	1.69	2.91	1.67	3.80

Table 21: Prevalence of themes compared to other vehicle types

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Comfort	Strong	Moderate	Strong	Strong	Moderate	Moderate	Weak	Moderate
Seating	Moderate	Weak	None	Mild	Strong	Very Strong	Moderate	Strong
Family	None	Mild	Mild	Mild	Strong	Strong	None	None
Ride Quality	Strong	Moderate	Moderate	Strong	Moderate	Moderate	Weak	Moderate
Transport	Moderate	Moderate	Weak	Moderate	Moderate	Strong	Moderate	Very Strong

CAFE Themes: Light-duty Trucks Themes

With passenger themes, light-duty trucks are as passenger oriented or more passenger oriented than passenger vehicles however, passenger vehicles do not overlap into light-duty trucks themes. All light-duty trucks themes provided a statistically significant difference (at 0.99 confidence) between light-duty trucks and passenger vehicles. While light-duty trucks were marketed differently from passenger vehicle, the difference is largely the result of large trucks being very different than other vehicles, including other light-duty trucks. Crossovers and SUVs were often marketed in a similar fashion as passenger vehicles and the light-duty truck abilities were a side note to the passenger amenities. Once crossovers and SUVs were removed into their own category, the differences between passenger vehicles and the crossovers/SUVs all but

disappeared. The only distinguishable difference was between comfort and family themes. The coding results suggest that some light-duty trucks fail to market light-duty truck themes and their silence is very similar to that of a passenger vehicle. Crossovers in particular failed to market any off-road or non-passenger amenity themes while the utility and tow themes were minimal at best. On the other hand, SUV were slightly more focused on light-duty trucks themes than crossovers but were often less vocal about those themes than large pickup trucks. Not one passenger vehicle market itself as having any off-road capacity or non-passenger related amenity. Only one passenger vehicle even mentioned towing despite CAFE language stating that passenger vehicles were more than able to two recreational vehicles. Finally, only two passenger vehicles mentioned utility or productivity features compared to 21 coded themes for light-duty trucks. The silence of passenger vehicles and crossovers within light-duty truck themes only strengthens the argument that crossovers are classified as light-duty trucks but are marketed as passenger vehicles. SUVs on the other hand retain some of their truck-like argument but are still very much passenger oriented vehicles with additional capabilities.

Off-road Capacity

One of the main and most important distinction between passenger vehicles and light-duty trucks in the CAFE designation however many vehicles now have four-wheel drive options available including vehicles that have been traditionally considered passenger vehicles. However, when addressing off-road use, it is not enough to consider a vehicle's ability to handle dangerous road conditions as being off-road focused. Thus, four-wheel drive to handle winter's snowy and icy roads is not truly an off-road feature. As a result, this theme focused on the manufacturer's claim for a vehicle to go completely off-road. This was a common theme for small and large pickup trucks but SUVs often included this claim although less frequently.

Crossovers and passenger vehicles were completely silent despite many of the vehicles featuring a all-wheel or four-wheel drive option. However, stating the argument that SUV featured off-road ability is tricky as 6 of the 11 vehicles coded completely lacked any off-road claim. As a result, 5 of the 11 SUVs accounted for all of the off-road claims.

Of the six off-roadless SUVs, four were luxury brands and those four were above $30,000 starting MSRP. The Honda Pilot and the Dodge Durango were the only non-luxury SUV without a claim to off-road capacity. Compare the lack of off-road capacity to the small and large pickup truck categories where only two pickup trucks lacked an off-road claim. As a result, the SUV claim to off-road capacity is mixed despite several models claiming a strong off-road ability. SUVs, as a category, have a mild claim to the off-road theme but that claim is not uniform within the SUV class. In addition, six of the SUVs were more focused on seating capacity than on off-road capacity as compared to only two SUV being more focused on off-road capacity and seating. Transporting family units was as strong of an SUV theme as off-road capacity. With off-road capacity, there is a complete silence with passenger vehicles that is not present with light-duty trucks within passenger vehicle themes. In addition, crossovers mirror the passenger vehicle silence along with over half of the SUV involved in this study. However, the off-road theme is one of the few themes that are mirrored within the image analysis. Although the image results will be discussed later, it is important to note that crossover vehicles share the same lack of depiction for off-road images as their passenger vehicle counterparts. SUVs are similar as well with on-road and on pavement depictions accounting for more images than the off-road counterpart (See Table 22: Off-road Distribution).

Table 22: Off-road Distribution

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Off-road (N)	0	0	0	0	0	10	9	12
Off-road Mean	0.00	0.00	0.00	0.00	0.00	0.91	1.50	2.40

Cargo

Cargo capacity was the only light-duty truck theme where passenger vehicles possessed a significant marketing presence. However, light-duty trucks maintained a statistically significant difference from passenger vehicles at a 0.99 confidence interval. While passenger vehicles marketed their cargo capacity, light-duty trucks marketed this capacity more frequently page by page. Surprisingly, alternative fuel vehicles were the most active in marketing their cargo volume among passenger vehicles. The reason for this cargo advocacy is unknown but it is likely attempting to shed perceptions about the lack of utility or spaciousness of a hybrid-electric vehicle or that all four vehicles were a hatchback/wagon design. Regardless of the reason, alternative fuel vehicles only accounted for six of the 88 cargo themes compared to crossovers with 12 and 24 for large trucks. On a whole, passenger vehicles averaged 0.61 pages with cargo related themes compared to 1.86 pages with cargo related themes for light-duty trucks. Cargo capacity was a significant for light-duty trucks as it was the third most coded theme for trucks behind comfort related themes and transport of passenger and passenger related items. Cargo capacity was a chief selling point but often this storage space is dependent on the conversion of passenger seating. For example, the Ford Explorer offers 80.7 of cubic storage space if the rear seats are folded flat or 21 cubic feet behind the 3rd row seats while Ford's large passenger vehicle, the Taurus (available in four-wheel drive) has 20.7 cubic feet of space in the trunk.

Because one definition of the light-duty truck is that the cargo volume is greater than passenger volume, the line between passenger and cargo space can be difficult to draw. With three rows of seating and 21 cubic feet of storage space, the Explorer is a passenger vehicle, but with the seats folded down is attuned with a light-duty truck. At the same time, the Taurus also has folding seats to allow for additional cargo room. If there were a station-wagon version to the Taurus, it would potentially have very similar passenger and cargo features with the Explorer.

To further confuse the point, the Ford F-150 markets its Supercrew cab (a cabin with a full backseat) as being either seating for five but also for 59.9 cubic feet of cargo space completely separate from the truck bed. In fact, the description of the interior space states that the owner would forget that the vehicle is actually a truck (2011 F-150 brochure, p.10). Now, the F-150 is a different vehicle type and is different in its marketing approach from the Explorer with a open truck bed that is never truly oriented for passenger transport, but nearly all of the Explorer's interior space is designed to transport passengers at least some of the time. The definition of a light-duty truck based on cargo space is blurred when vehicles have convertible spaces.

Defining a greater cargo spaces as a criteria for larger vans without seating is acceptable. However, the convertible space where the space can be used for passenger or cargo is undefined. Considering that many model market seating and the transport of passengers and their stuff as much as cargo space, can the intended purpose of the vehicle be to transport cargo? In addition, almost all small passenger vehicle hatchbacks have folding seats to allow greater cargo room, but that feature was only minimally present within the marketing material for passenger cars. Once again, there becomes the issue that specific light-duty trucks maintain the "universal vehicle" label while marketing a dual use as both passenger oriented and light-duty truck capacity.

However, the volume of cargo space is very different from the payload on which most pickup trucks are marketed. Finally, the attention to cargo capacity for large trucks should not be ignored. While other vehicles discussed cargo capacity on one or two pages per brochure, larger trucks discussed cargo capacity on nearly five pages per brochure. Cargo was much more important for the large trucks than for other vehicles and deservedly so. The difference between the amount of attention to large truck as compared to crossovers and SUVs only increases the disparity within the marketing approach. A consumer for a large truck is purchasing that vehicle in part for its ability to move cargo while the relationship with the ability to move cargo and a potential crossover or SUV buyer is more closely related to that of those researching passenger vehicles.

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Cargo (N)	6	6	8	3	12	19	10	24
Cargo Mean	1.50	0.75	0.57	0.25	0.92	1.73	1.67	4.80

Towing

Towing is expected for both passenger vehicles and light-duty trucks however vehicle specializing is towing larger loads are most likely going to need regulations more akin to those permissible for light-duty trucks as the amount of towing capacity is directly related to engine output. While passenger vehicles are expected to be able to tow, the marketing material only provides a single reference to towing among all passenger vehicles. The Dodge Avenger is the only passenger vehicle that markets its ability to tow, but the tow hitch is not included. Only two crossovers including towing within their marketing material but like the Avenger, the ability to tow items required additional equipment and did not portray the vehicle with a hitch visible on the page, which the towing theme appeared. As a result, the vehicles that were towing oriented were SUVs and pickup trucks. However, there is a difference in how the towing abilities were

treated. Comparing how SUV and large trucks were represented, there is a difference to what types of items are towed. The iconic SUV and the large trucks of the big three (GM, Ford, and Chrysler) distinguished between the towing duties. All three SUVs, the Chevrolet Tahoe, Dodge Durango, and the Ford Explorer were displayed towing boats while their pickup truck counterparts towed other items such as trailers or other vehicles. The towing abilities of the SUV were that of towing recreational vehicles that is written into CAFE as a passenger vehicle ability, yet no passenger vehicle or even a crossover was displayed towing a boat. Unlike off-road capacity, most SUVs did mention towing as within their brochures and both were models manufactured by Toyota, so that is likely a brand specific silence. Much like the cargo theme, large trucks were much more focused on towing that other vehicles. With five pages per brochure discussing towing, there was little doubt of the vehicles capacity while SUV brochure suggested that the vehicle can tow but there were other uses.

Table 23: Towing

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Towing (N)	0	0	1	0	2	15	9	25
Towing Mean	0.00	0.00	0.07	0.00	0.15	1.36	1.50	5.00

Non-passenger Utility

This category is the combined non-passenger amenity and utility grouping. Due to irregularities with the coding process, individually both categories failed to meet the acceptable reliability standard (0.70 IRR). However due to cross-coding errors, when the categories were combined they were more than acceptable (0.81 IRR) and possessed usable data. The results of the combined non-passenger utility items were similar to other light-duty truck themes. For the most part, passenger vehicles and crossovers were silent or nearly silent within this category.

SUVs had a few pages mentioning their non-passenger utility but frequency of this theme was much less than the pickup truck counterparts. A small truck possessed a few pages discussing non-passenger utility items but it is was the large trucks that focused on these amenities. Much like cargo, towing, and now non-passenger utility features, large trucks were focused in communicating these features. Large trucks had near six pages per brochure discussing features that were not related to transporting passengers or features that allow or facilities productivity in a work-related environment.

Table 24: Non-passenger Utility

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Utility (N)	0	1	1	0	1	5	11	29
Utility Mean	0.00	0.13	0.07	0.00	0.08	0.45	1.83	5.80

CAFE Textual Analysis Discussion

So, what is the likely classification of a vehicle in which 70 percent of their total themes are passenger related while only 30 percent are light-duty truck related? That is the conundrum of the SUV. What is not an issue is the crossover vehicle because passenger themes nearly outnumber the truck themes early seven to one, which makes it clearly within the passenger vehicle distribution.

Vehicle Type	Alternative Fuel Vehicles	Small Passenger Vehicles	Medium Passenger Vehicles	Large Passenger Vehicles	Crossovers	Sport Utility Vehicles	Small Trucks	Large Trucks
Passenger Vehicle Theme	85%	88%	91%	97%	87%	70%	37%	35%
Truck Themes	15%	12%	9%	3%	13%	30%	63%	65%
Total	100%	100%	100%	100%	100%	100%	100%	100%

From the textual analysis, there is a clear pattern developing based on vehicle type that does not correspond with current regulations. Even with foot-printing, there is a significant breakdown of the divisions of vehicles relating to fuel economy. While the federal regulation identifies two basic but different consumer vehicle types (passenger vehicles and light-duty trucks) the text of the brochure suggests that the manufacturer market different distinctions. If one approaches the marketing material strictly from the two vehicle types, crossover vehicles are indistinguishable from the other passenger vehicles and SUV are at best hybrid passenger/cargo vehicles. Not only that, but light-duty trucks are making stronger claims towards passenger transport of less than 10 passengers than passenger vehicles. The problem of the vehicles being cross-labeled is a difficult challenge. The reason for different standards was to allow specific vehicles to be able to perform specific functions no related to the transport of fewer than 10 passengers, however the market incentive of being able to offer a less fuel efficient, often larger vehicle to consumers is significant; you do not have to sacrifice anything. Consumers were able to adopt light-duty trucks designed to function as a passenger vehicle in order to avoid reduction in size, engine displacement, and other side-effect associated with CAFE standard.

The brochures within the text analysis have promoted this market inefficiency between passenger oriented light-duty trucks and passenger vehicles. As a result, passenger vehicles are marketed as more of a single purpose, niche vehicle. While crossovers and SUV are marketed as a vehicular Swiss army knife, passenger vehicles are an odd size potato peeler. Passenger vehicles main market advantage featured in the brochures was comfort and ride quality. However, the light-duty trucks were not silent in either of these categories, they simply did not market those features as often. In some cases, crossovers and SUVs did out market comfort and ride quality more than alternative fuel and small passenger vehicles. If a consumer is searching

132

for a family vehicle, particularly to transport small children, then the vehicle that manufactures suggest is the light-duty truck. Consumers often want it all, and passenger oriented light-duty trucks offer that to the consumers while passenger vehicles represent sacrifice.

Based on the text analysis and not being constrained by the CAFE's classification for each vehicle group, the marketing material suggests that there are different vehicle types for different purposes. Passenger vehicles and crossovers are general purpose commuting vehicles for the driver and a few passengers. SUVs are multi-purpose vehicles especially for the transportation of passengers and for recreational/passenger equipment not associated with work or utility. Small trucks are more of a type of recreational vehicle, and not a "work truck". In fact, the small Toyota truck, Tacoma, outright claims that this truck is not meant to haul fertilizer while often depicting the truck jumping over sand dunes with dirt-bikes in the bed. Basically, the small truck is a recreational off-road vehicle not designed for construction sites or other utility based production. Finally, the large truck is the work and productivity vehicle for the work site. In addition, the marketing material presents it as a vehicle to move work crews (thus passengers). While the large truck is work oriented, the message that this vehicle can also move people is something to keep pay attention too. Considering large trucks market comfort, seating, and transport of passenger nearly as much, if not more as many passenger vehicles is significant. As four door crew-cab large pick-up trucks become more prevalent, then these trucks could become the next alternative to the large SUV. Much like in the early 1980s when the SUV was introduced as the big vehicle alternative to shrinking passenger vehicles, the five of six passenger large pickup truck might become the market alternative for consumers if SUVs become smaller much like the recent emergence of the Crossover platform.

Textual Analysis of Automobile Dependence

On a whole, there was significant difference between passenger vehicles and light-duty trucks across all of the automobility/automobile dependence themes. However, specific themes did show some differences between the two automobile types. The coding analysis suggests that vehicles are marketed differently based on vehicle type (at a 0.95 confidence). While comprising only four vehicles within this study, the alternative fuel vehicle classification averaged 5.5 automobility themes per brochure. In addition, large trucks and small passenger vehicles also possessed higher than average number of automobility themes. Furthermore, there are differences between the vehicle types and the automobility message. Mobility and freedom were a significant light-duty truck theme while location was certainly a passenger vehicle theme. Other interesting but non-significant differences and similarities occurred between specific vehicles. For example, alternative fuel vehicles, SUVs, and large trucks possessed higher number of trip purpose themes despite being different vehicle types. Within this higher number, the message was not similar at all and trip purpose differed between vehicles.

On a whole, the numbers of themes were fairly consistent with four of six automobility themes being between 29 and 38 total instances. Only freedom and lifestyle were absent from this close cluster of instances. Freedom, surprisingly, was nearly missing from the brochures and was only coded nine times with eight of those times occurring in light-duty truck brochures. There were a total of 195 total automobility related themes coded with all themes meeting the 0.70 inter-coder reliability. Lifestyle on the other hand was coded 56 times and was dispersed across all vehicle types even if some vehicles were stronger in that message.

Table 25: Distribution of Automobility Themes

	Alternative Fuel Vehicle	Small Passenger Vehicle	Medium Passenger Vehicle	Large Passenger Vehicle	Crossover	Sport Utility Vehicle	Small Truck	Large Truck	Total
Mobility	3	3	4	2	2	8	5	5	32
Freedom	0	0	1	0	3	4	0	1	9
Status	1	8	4	8	5	9	1	2	38
Trip	7	3	2	0	1	9	1	6	29
Location	3	6	8	2	2	4	3	3	31
Lifestyle	8	12	6	3	7	8	3	9	56
Total	22	32	25	15	20	42	13	26	195

Automobile Dependency Profile of the Vehicle Types

The distribution of automobile dependency themes per vehicle type gives a profile of how the automobility themes are distributed compared to other themes. This in turn provides profiles of how manufacturers market automobile dependency to potential consumer groups. In some instances, vehicles are much more concerned with some specific theme while others are generalist with a more even distribution of themes. As a result, a fragmentation occurred of the themes within the different vehicle types. Manufacturers marketed automobile dependency different among the different vehicle types. Some of the vehicles profiles are expected. Large passenger vehicles concentrated on status, which was expected since this vehicle was one of the more expensive groupings with an average entry level vehicle price of $35,213. However, SUVs had a higher average price of $40,598. While SUVs average a greater number of status related themes and had a greater total of status themes, the status theme was much less important overall within SUV brochures compared to large passenger vehicle brochures. The vehicle profiles suggest that automobility/automobile dependence themes are not identical across all vehicle types but rather differ substantially between vehicle types. Rather much of the automobile message is fragmented addressing different reasons why a consumer should choose the automobile. The only instance where the automobile message was similar was between

alternative fuel vehicles and large trucks. Alternative fuel vehicles and large trucks represent the opposite side of the vehicle spectrum so drawing parallels based on vehicle type presented a challenge for automobile dependency. As a result, automobile dependence is potentially different for each consumer and that is reflected within the marketing of vehicles.

Table 26: Automobility Themes as a Percentage of All Theme per Vehicle Type

	Alternative Fuel Vehicle	Small Passenger Vehicle	Medium Passenger Vehicle	Large Passenger Vehicle	Crossover	Sport Utility Vehicle	Small Truck	Large Truck
Mobility	14%	9%	16%	13%	10%	19%	38%	19%
Freedom	0%	0%	4%	0%	15%	10%	0%	4%
Status	5%	25%	16%	53%	25%	21%	8%	8%
Trip	32%	9%	8%	0%	5%	21%	8%	23%
Location	14%	19%	32%	13%	10%	10%	23%	12%
Lifestyle	36%	38%	24%	20%	35%	19%	23%	35%
Total	101%*	100%	100%	99%*	100%	100%	100%	99%*
* Totals do not equal 100% due to rounding								

The Alternate Fuel Vehicle Profile

Two themes, trip purpose and lifestyle are stronger elements within the alternative fuel vehicle brochures. Lesser elements of mobility, location and status have some instances but are less important. Freedom is completely missing from the alternative fuel vehicle. Much of the lifestyle themes for the alternative fuel vehicle are related to an environmental perspective, specifically a "green lifestyle." Often these claims come with an award statement such as both the Chevy Volt and the Chevy Tahoe Hybrid (technically classified as a SUV within this study) which claimed top honors as green vehicles. While this study is less concerned with the validity of these claims, the presence of the claims within the brochures influences the perceptions of the consumer looking to identify with specific themes. The Honda Insight asks "Can your car help steer your life? [The Insight] can – if you choose one that reflects your style, sense of fun, love of value, and concern for the environment" the insight will "Steer your life" (Insight Brochure, p. 2). Therefore, not only will the vehicle be a green lifestyle statement, it will be the center of that green lifestyle statement.

The trip purpose theme was also prevalent within the automobile dependence themes. While alternative fuel vehicle played up their green lifestyle, they were also marketing the alternative fuel vehicle as the every-trip purpose. For example, the Toyota Prius argues " Road trips, grocery runs or your daily commute — Prius can handle them all" (Prius Brochure, p. 11).

See Figure 7: Prius Trip Purpose for the example

CARGO AREA¹
The 3rd generation Prius has a larger cargo area that makes it as capable of carrying your gear as it is of transporting friends and family. Road trips, grocery runs or your daily commute — Prius can handle them all.

Figure 7: Prius Trip Purpose

As a result, the alternative fuel vehicle connects with the consumer in two main ways. On one hand, it connects with those consumers wish to identify with a "green lifestyle" but on the other hand it also plays directly into an automobile dependent lifestyle as well. The Honda Insight makes an odd statement about being "lost in the suburbs" (Insight Brochure, p. 3) and that seems remarkably correct for this type of vehicle. The alternative vehicle struggles with being both environmentally friendly and being a continual use vehicle - used for every trip purpose. If vehicles suffered from cognitive dissonance, the alternative fuel vehicle would be a prime example.

However, the idea that if one is forced into an automobile dependent lifestyle, then the alternative fuel vehicle would be the "greener" option over and SUV, crossover, or other passenger vehicle. The problem arises is that there is nearly as strong of an automobile dependence argument within the brochure. The alternative fuel vehicle brochure is not arguing that the alternative fuel vehicle is a "sometime-use vehicle" rather it is an multi-purpose, all the time vehicle. Yet, we encounter another problem, the other multi-purpose vehicles, the Crossover and SUV. With CAFE themes, other vehicles were much more multi-purpose than the alternative fuel vehicle. As a result, the alternative fuel vehicle is struggling with trying to balance two different perspectives with one being that they are not "real cars" (will be discussed within the

image analysis) and the need to be environmentally friendly. While one could argue that the alternative fuel vehicle is simply being green-washed, and in the case of the Chevrolet Tahoe Hybrid it might be, the alternative fuel vehicle is struggling to connect with environmentally conscious but ultimately automobile dependent population while also legitimizing itself as a option for traditional fuel-source vehicles. The hybrid label does apply in more ways than just the engine technology.

Small Passenger Vehicles Profile

The small passenger vehicle is unique as it features strong lifestyle and status claims. The status claim is surprising as the small passenger vehicle group has the lowest entry MSRP of any vehicle at $16,228. For comparison, the small passenger vehicle group's MSRP is $12,382 less than the mean price of all vehicles coded in this study and $4,245 less expensive than the second least expensive group, small trucks. However, the claim for status might not be as unusual as the price suggests. Small passenger cars are likely a luxury option from a certain perspective. The Toyota Corolla states "Corolla is right in line with your plans for upward mobility" and that is expected for a vehicle that is both an entry-level type of vehicle for many consumers as well as a vehicle that is also priced within a similar price-range as many used mid-sized vehicles. Thus owning a "new" car is a claim to status over used vehicles particularly for new buyers. The status theme permeates the small passenger vehicle brochures and it is mostly focused at "living large" as the Hyundai Elantra claims or "upward mobility" as the Toyota Corolla claims which is applicable to those entering a market segment or young buyers with higher expectations but restricted budgets. The other major theme for small vehicles was lifestyle. The lifestyle theme accounted for 38 percent of all small vehicle themes. The Honda Civic, which underwent a complete model change for 2011 best incorporated a strong lifestyle theme. The Civic was not

only interested in connecting with a particular life style, but rather six lifestyles corresponding to

six different trim levels. Basically, the brochure marketed each individual trim level as a lifestyle

choice. The Honda Civic brochure states,

> "Why are there [six] different Civics? It's simple, really: Because all of us, from
>
> earth lovers to road burners to carpoolers, are looking for our own personal
>
> unique mix of everything that makes a Civic a Civic. In short, because we're all
>
> different. To each their own" (Civic Brochure, pg.2).

See Figure 8: Civic Lifestyles page below

Figure 8: Civic Lifestyles

While nearly each small passenger vehicle had some lifestyle argument (Kia Forte and

Nissan Sentra being silent), the Honda Civic was the most lifestyle oriented. The Civic harked to

the environmentalist aspect with their hybrid sub-model while also marketing towards the sporty-oriented driver with the Si model. Other themes like location, trip purpose, and mobility were also present within the brochures while freedom was once again absent. The presence of location within the small passenger vehicle classification is mostly the result of the Dodge Caliber. The Dodge Caliber, like some other Dodge vehicles label the different trim levels with location names such as "mainstreet" and "uptown". The mainstreet package is a second tier options package that offers amenities not available on the base model but without other features on higher trim levels while the uptown package is a top trim level that offers all the amenities other than specific performance features found on the performance model. In this instance, the location theme was not necessarily focused but rather appeared more of a status-related theme. It was coded as location due to the coding constructs but it might be a case where the manufacturer is selling status via a location within the name of the vehicle. "Uptown" conveys a luxury status while "mainstreet" conveys an everyday authenticity within an American cultural perception.

The small passenger vehicle is a mix of status and lifestyle themes within the automobile dependence framework. It is not just a dependence for mobility, rather the small passenger vehicle is marketed as the extension of the consumer's self in order to express their individuality within a mass produced consumer good as well as to project their social standing to others within an automobile dependent culture. While the small passenger vehicle is the least expensive vehicle type, those that purchase the vehicle are expressing that they have the means in which to participate in a culture that values automobile ownership and use.

Medium Passenger Vehicle Profile

Medium passenger vehicles are basically the bread and butter vehicles for most manufacturers. In fact, they are often one of the best selling vehicles for manufacturers. Medium

passenger vehicles include the Toyota Camry, Honda Accord, Ford Fusion, Chevrolet Malibu, and Hyundai Sonata. Medium passenger vehicles differ slightly from their alternative and small passenger vehicle counterparts. Unlike the other two categories, location was the greatest theme outnumbering lifestyle. However, the location theme for medium passenger vehicles was focused on the location of assembly or manufacturer location than it was the consumer's location. In addition, only a few vehicles: the Chrysler 200, Hyundai Sonata, Ford Fusion, and the Dodge Avenger displayed the location themes and the number of themes was concentrated within a few vehicles. The Chrysler 200 and the Hyundai Sonata were the two most vocal vehicles and both centered on being "American". While the Chrysler 200 was focused on being a product of Detroit using the "Imported from Detroit" theme, however, the Korean based Hyundai Sonata focused on being designed in California and built in Alabama. For an example of the American argument see Figure 9: Chrysler 200 below.

Figure 9: Chrysler 200

 The Ford Fusion did mention "the city" via fuel economy ratings while the Dodge Avenger did have a "mainstreet" trim level like those present in the small passenger vehicle category. Rather than being focused on a specific urban environment, the medium vehicles were focused on their origin. Considering that 32 percent of the medium passenger vehicle themes were location oriented within a few specific vehicles, the location message is either very important for a few vehicles or not important.

Now, the lifestyle category was the second most coded category and was fairly well distributed across most of the medium passenger vehicle. Lifestyle accounted for 24 percent of the themes, but lacked a specific uniform lifestyle. For instance, the vehicles differed between a driver enthusiast lifestyle, an environmentally friendly lifestyle, and an active lifestyle. Compared to the lifestyle percentage for other vehicles such as 36 percent for alternative fuel vehicles, 38 percent for small vehicles, and 35 percent for crossovers, lifestyle was less important for medium passenger vehicles.

Status and mobility both registered for 16 percent of the coded medium passenger vehicle themes but both were slightly below the mean these themes (17 percent for mobility and 20 percent for status). However, once category other than location that medium passenger vehicles stood out was the freedom theme. Medium passenger vehicles were the only passenger vehicle category to have an instance of freedom coded within the brochures with the comment that the vehicle has "an appetite for the open road" (Chrysler 200 Brochure, pg. 7). The medium passenger vehicle is a strange category based on the automobile dependency themes. While they feature some themes such as location and lifestyle prominently, the themes are not distributed equally or they are inconsistent with their message. Compared to smaller vehicles that had many lifestyle themes, medium passenger vehicles were not geared toward upward mobility or attracting many different lifestyles into one vehicles. However, medium passenger vehicles appeared to be focused on catching one specific lifestyle rather than catching many lifestyles like the small passenger vehicle. In addition, while alternative fuel vehicles and small passenger vehicles possessed four or five automobile dependent themes per vehicle, the medium passenger only possessed 1.79 themes per vehicle. The automobile dependency message is less pervasive for the medium passenger vehicle than alternative fuel and small passenger vehicles however, the number of

CAFE themes for medium passenger vehicles (7.57 instances per brochure) was basically the same as the small passenger vehicle (7.50). Marketing automobile dependent themes was not a concern for manufactures selling medium passenger vehicles despite being some of the bestselling vehicle categories.

Large Passenger Vehicle Profile

If one theme would sum up the large passenger vehicle, that theme would be status. Over half of the automobile dependency themes coded for large passenger vehicles was the status theme. Mobility, location, and lifestyle recorded a few instances and accounted for between 13 and 20 percent, but status was 53 percent of all coded instances. For comparison, the next closest vehicle categories that featured status as a main theme were small passenger vehicles with 25 percent of themes coded as status and crossovers also feature status 25 percent of the coded themes. The main focus from the automobile dependency themes is status but seven of the twelve vehicles were luxury brands, so the status argument appears to be a product of the branding and not the vehicle type. However, of the vehicle with status claims, four were luxury brands that included Chrysler and Hyundai and three were non-luxury brands. In addition, SUVs that included many luxury brands and higher average vehicle price featured only 21 percent of their themes as status themes although SUV had the greatest number of total instances of status. However, unlike SUVs, luxury vehicles did not have any freedom or trip purpose themes and considerably less lifestyle and mobility themes. In addition, while small passenger vehicles are focused on upward social mobility, the large passenger vehicle's status is focused status through the purchase of the vehicle. The large vehicle uses statements such as "upgrade to Avalon class" or "next in the line of kings" (Toyota Avalon Brochure, pg 4; Chrysler 300 Brochure, pg 2).

IT HAS SOMETHING THAT RUNS DEEPER THAN AN UNMISTAKABLE PRESENCE. MORE THAN A
NAMEPLATE OR A NUMBER. IT HAS A LEGACY. TO KEEP IT, THE 2011 CHRYSLER 300 ARRIVES AS THE
MOST TECHNOLOGICALLY ADVANCED VEHICLE IN ITS CLASS.[1]* IT COMBINES THE PRIDE OF A
HARD WORKER WITH THE CLASS OF A GENTLEMAN. IT'S THE REWARD PASSED ON FROM THE
MOST AWARDED NEW CAR EVER.[2] THIS IS THE ALL-NEW CHRYSLER 300. THE NEXT IN A LINE OF KINGS.

Figure 10- Chrysler 300 Kings Statement

Overall, the large passenger vehicle is status oriented but the distribution of automobile dependent themes is less than any other passenger vehicle. Large passenger vehicle possessed only 1.25 themes per brochures and 15 total themes while small passenger vehicles possessed 4.0 themes per brochure and 32 total themes. Medium passenger vehicles saw a reduction in the number of themes and this trend continued with large passenger vehicle. Comparatively, the number of CAFE themes was much greater for larger passenger vehicle. Large passenger vehicles have 9.08 instances per brochure compared to 7.5 and 7.57 for the small and medium passenger vehicles. Only alternative fuel vehicle had more CAFE themes per brochure than large passengers out of the passenger vehicle classification. However, alternative fuel vehicles possessed 5.5 automobile dependency themes compared to the 1.25 themes for large vehicles. The result for large vehicles is that claims to ride quality, comfort, and luxury are more important to claims of mobility or lifestyle compared to other passenger vehicles. While the claims within the brochure of large passenger vehicles are status the profile of the large passenger vehicle appears to center on the statement of features rather than automobile dependent themes.

It is important to note that two coders mentioned that they felt luxury brands marketed a lot of abstract notions leaving the reader to interpret the meaning. For example, the Acura RL model has a page with a large serif font "T" in white text on a black background followed by a

paragraph that describes the vehicle (Acura Full Line Brochure, pg. 50). Elsewhere Acura continues with the large letter design. This large letter theme is not carried on in any other Acura model. The Hyundai Genesis itself was portrayed as the anti-status symbol status symbol. As a result, the large passenger vehicles, especially luxury brands, appeared to have an abstract quality that might have hampered or was not covered within this study's framework. Large passenger vehicles might be trying to communicate more by saying less but they are still being very vocal about the feature in which a consumer might evaluate. Further research into the abstraction of large passenger vehicles and/or luxury vehicles might be relevant in informing a different element of automobile dependency.

Passenger Vehicles as a Combined Profile

Table 27: Passenger Vehicle and Light-duty Truck Automobile Dependence Theme Comparison. Rows that are shaded are significant at 0.99 confidence

	Passenger Vehicles	Light-duty Trucks
Mobility	0.13	0.22
Freedom	0.01	0.07
Status	0.25	0.15
Trip	0.12	0.14
Location	0.19	0.14
Lifestyle	0.29	0.28
Total	1.00	1.00

Passenger vehicles differed from light-duty trucks in three categories: mobility, freedom, and location. Only location was significantly more important for passenger vehicles than for light-duty trucks. While status appears more important for passenger vehicles, it was concentrated in the large vehicle category and there was too great of a deviation between the categories to state that the difference was significant. On a whole, it is best to split passenger vehicles into two different groups based on their automobile dependency themes. In the first group, you have alternative fuel vehicles and small passenger vehicles. This group has very

strong automobile dependence themes with an average of 4.5 themes per brochure. Not only are

the themes per brochure greater, but the message is different with trip purpose and lifestyle

possessing a greater percentage of the themes than the second group. The second group that

appears out of the automobile dependency themes is the medium and large passenger vehicles

group. Both medium and large passengers have few number of automobile dependency instances

than the other passenger vehicles (1.53) and the instance are in different automobile themes.

Rather than focusing on trip purpose and lifestyle, status (as a result of large vehicles) and

location (as the byproduct of medium passenger vehicles) has a greater number of instances.

While this second grouping of medium and large passenger vehicles might not be as cohesive

and similar as small and alternative fuel vehicles, it is certain that these vehicles are not marketed

in the same way as the small and alternative vehicles are to consumers.

Table 28: Groups of Automobile Dependence Themes

	Alternative and Small	Medium and Large
Mobility	0.12	0.15
Freedom	0.00	0.02
Status	0.15	0.35
Trip	0.21	0.04
Location	0.16	0.23
Lifestyle	0.37	0.22
Total	1.00	1.00

The result of this difference in passenger vehicles and light-duty trucks as well as a

difference between the categories of passenger vehicles is significant. The strongest claim for

automobile dependence and automobility is marketed in alternative fuel vehicles and small

passenger vehicles. It appears as if manufacturers are actively seeking to create or maintain some

of the automobile dependency traits to new "new vehicle" consumer purchasing the traditional

entry level vehicle or to consumers purchasing an alternative fuel vehicle looking to minimize

the impacts of the automobile. Considering the strong lifestyle theme combined with trip

purpose, the manufacturers are inserting the vehicle as a means of socially expressing a specific

lifestyle to others while also making the vehicle's purpose indispensible for living that lifestyle.

This marketing approach falls directly in line with the concept of automobility. While it might

seem a given that automobile manufacturers will market vehicles within the automobility

phenomenon, it is the type of vehicle that is important. Both medium and large passenger

vehicles are nearly silent compared to the small and alternative fuel vehicles. The question that

arises in "why" these two vehicle type are marketed differently. Are alternative fuel vehicle

attempting to be legitimized as a "normal" vehicle? Is the manufacturer attempting to maintain

the automobile dependence through the adoption of alternative fuel vehicles instead of

consumers adopting other transportation habits? Are small passenger vehicles the entry to the

automobile dependent lifestyle as a pseudo-luxury statement that allows younger individuals to

show their participation within the automobile culture? The question of why the groups are

different is an avenue for future research.

Crossover Profiles

Crossovers, like some other light-duty trucks possessed a more evenly distributed

automobile dependency themes although the number of themes per brochure was relatively low

at 1.54 themes per brochure. Crossovers did not possess any empty categories although the trip

purpose was not a strong theme. Crossovers, much like some other vehicles were primarily

lifestyle vehicles. Lifestyle theme accounted for 35 percent of all automobile dependency while

status accounted for 25 percent and freedom accounted for 15 percent. Most crossover vehicles

possessed the lifestyle theme with 7 out of the 13 vehicle making a lifestyle argument. No one

vehicle had more than one page with the lifestyle theme. For example, Toyota ask the question

"Am I the Venza type?" and asks the consumer what type of person they are and if they like new

ideas and places (Toyota Venza Brochure, pg. 2). Toyota uses this marketing approach with

other vehicle types such as the Corolla and the Highlander, but not with the Camry in which the

Venza shares the same platform. Considering many of the crossover vehicles are newly

introduced vehicles, marketing towards the "adventurist/try-new-things" lifestyle is unique. See

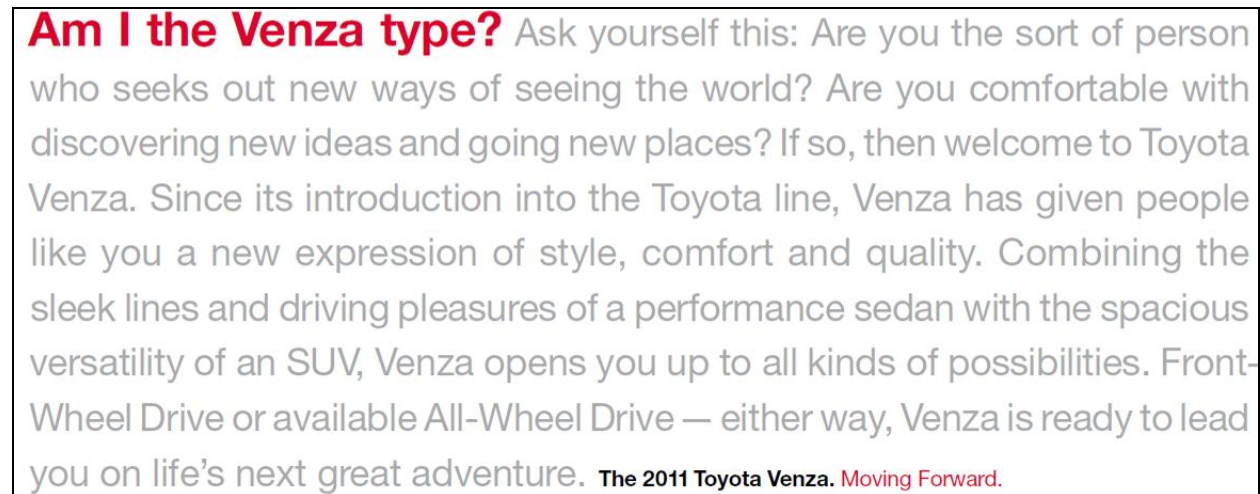Figure 11: Toyota Venza Lifestyle.

Figure 11: Toyota Venza Lifestyle

Compared to other lifestyle oriented vehicles, the crossover was not focused on appealing to

multiple lifestyles or environmentally oriented lifestyles. Crossovers were marketed towards the

"first adopters" as an alternative to other vehicles.

The second most common theme was status. Status for the crossover appears to be

different depending on whether or not the vehicle was a part of a luxury brand and the price

range. Crossovers differed greatly on price with some being between $19,000 and $23,000 base

MSRP while other was well above $35,000. As a result, the Crossover mentioned both upward

mobility as well as arriving. The wide price range wide type of vehicles claiming to be a

crossover makes the status claim a bit ambiguous.

The third most common theme for crossover vehicles was the freedom theme. While

freedom was nearly completely absent from passenger vehicles, it occurred on three pages for

three different manufacturer's models. All three were Japanese: the Toyota Venza, the Acura ZDX, and the Nissan Murano. All three offered an escape and go see the world. In the Acura's case, it was a weekend escape. The crossover's freedom theme was not that of a rugged individualism but rather as a means of escaping routine continuing the "adventurist" theme. The crossover appears to be an active lifestyle vehicle for consumers looking to escape. There is a status component to the crossover but it appears to be dependent on the price of the vehicle rather than the crossover classification. Crossover vehicle classification is a very new concept for modern automobile consumer. Crossovers only existed in the last couple of years as the likely result of consumers seeking SUV-like capacity but greater fuel economy as the result of recent fuel price increases. The automobile dependency argument was far less important with only 20 themes compared than the 117 CAFE coded themes. It appears that the argument for dependence on the vehicle is less important for manufacturers for those choosing crossovers.

It may be important to note an observation by one coder that crossover might be a temporal fashion statement-type of vehicle. Coder A commented that the Dodge Journey was a vehicle in a fashion photo shoot (See Figure 12: Dodge Journey Fashion Images). The coder pointed out that the vehicle was an accessory to the individuals pictured within the image. Much like the jacket, purse or sunglasses, the vehicle is a means to a social image that the consumer wishes to show to other people. While the Dodge Journey did not possess a lifestyle theme, the coder felt that the combined text and image was playing on a double-meaning comparing the person and the vehicles as being something that "fuels confidence" and "stand out without selling out" (Dodge Journey Brochure, pg 2, pg 13). While the coder felt that these statements were not explicit to meet the criteria for the coding instruction but that the gap between the image and text might be an avenue for further research. Earlier pilot studies suggested that people appearing

150

within the marketing material was not a primary concern for online images and the vehicles
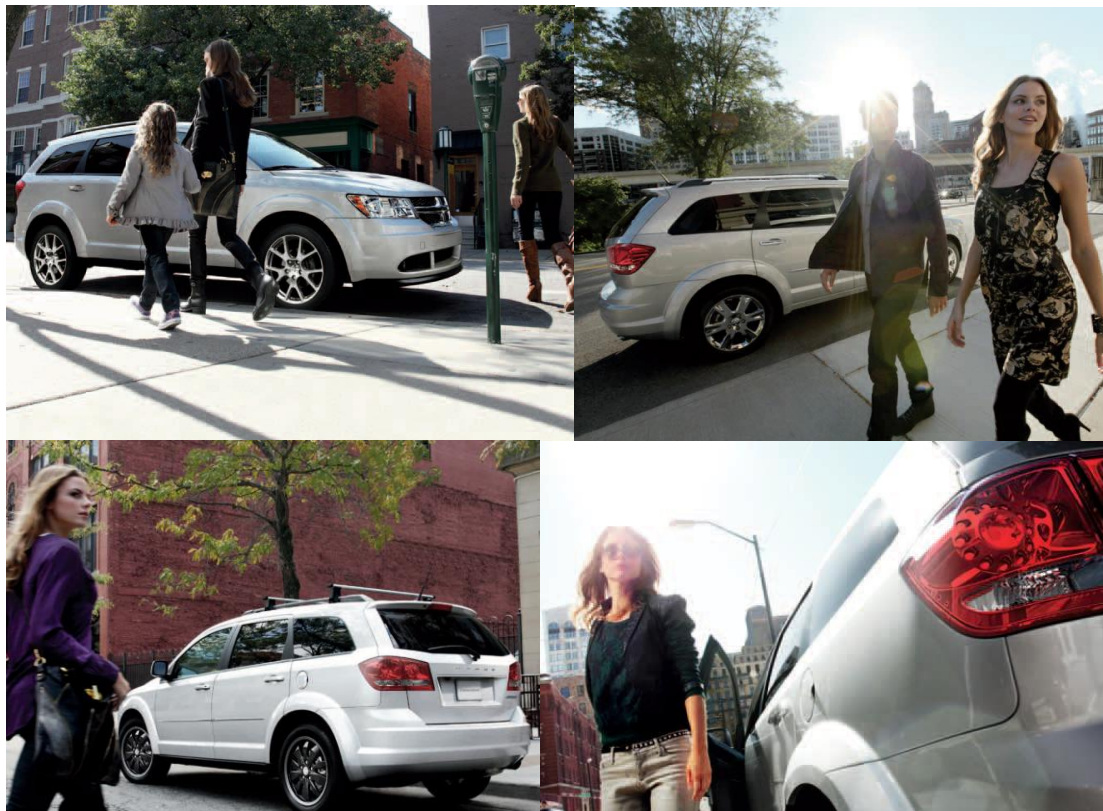
stock images.

Figure 12: Dodge Journey Fashion Images

Sport Utility Vehicle Profile

Sport utility vehicles (SUVs) are the only vehicle type with all automobile dependency

themes accounting for above 10 percent of the SUV themes and no themes accounted for more

than 21 percent. As a result, SUVs are unique in the way that they contain a noteworthy message

to consumers in all categories. In addition, not only were the themes distributed fairly equally

among the brochure, SUV also had the most pages (42) with automobile dependence themes.

However, the average theme per brochure was 3.82 that were below alternative fuel vehicles,

small vehicles, and large trucks. As a result, SUVs had a strong but not overbearing automobile

dependency argument within the brochure.

Unlike other vehicles, one theme does not "stick out" as the hallmark of the SUV. Instead, the even distribution of themes combined with the number of instance suggests that SUVs are the ultimate, general purpose automobile. Status and trip purpose were the two most frequent coded themes accounting for 21 percent of the SUV automobile dependence theme while both mobility and lifestyle accounted for 19 percent. Specific trips focused on the weekend escape or road trips. For example the Ford Explorer, Toyota 4Runner, and the Honda Pilot all feature a strong "road-trip" theme and the Honda Pilot says it is "Ready to Roam" (Honda Pilot Brochure, pg. 9) See Figure 13: Honda Pilot "Ready to Roam".

Figure 13: Honda Pilot "Ready to Roam"

Status was a frequent theme considering that the SUV were the most expensive vehicle type coded with an average MSRP of $40,599. This in impart due to the luxury SUVs being the most expensive vehicle coded and the non-luxury SUV being considerable more expensive than many of their medium and large passenger vehicle counterparts. For instance, the least expensive SUV, the Ford Explorer was $28,280 while least expensive non-luxury brand large passenger vehicle was the Chevrolet Impala with a base MSRP of $24,995. As a result, the average SUV price was $5,385 greater than the large passenger vehicle. Considering the cost of the SUV in comparison to the large passenger vehicle, one would expect status to be coded as a significantly higher number and percentage but that was not the case.

152

SUVs also offered an ample amount of both mobility and lifestyle themes. Both appeared on eight pages and were fairly well distributed among the vehicles. In addition, SUVs had the greatest number of mobility theme out of any vehicle. Compared to crossover vehicles, which share some similarities, this difference in mobility is one along with trip purpose that was considerably different. While crossovers are a new alternative to the SUV they are not marketing the same mobility and trip purpose argument. Surprisingly, large trucks and alternative fuel vehicles share a similar amount of trip purpose themes but the type of trip is different for alternative fuel vehicles and large trucks. Alternative fuel vehicles framed trip purpose as a road trip, daily commute, and errand vehicle. For example, the Toyota Prius said the large cargo volume of the vehicle made the Prius able to handle the "road trips, grocery runs, and the daily commute" (Toyota Prius Brochure, pg 11). On the other hand, the Toyota Tundra (large truck) states that with its V8 engine it can haul, tow, and are used for the commute (Toyota Tundra Brochure, pg 6). Now the difference between the alternative fuel vehicle trip purpose and the large truck purpose was that the engine's size and powertrain's ability was the main attribute for a large truck's purpose while the alternative fuel vehicle was focused on transporting the user, passengers, and the passengers items. Now, the SUV's trip purpose was more akin to the alternative fuel vehicle. For example, the Ford Explorer is the vehicle for "Spontaneous day trips. Carefully organized vacations. Every ride in between", the Dodge Durango states, "Three rows of seats... so you can haul the whole crew on road trips aplenty" (Dodge Durango Brochure, pg 4). moreover, the Toyota 4Runner states that the vehicle is for "quiet weekend away or a quick trip around town" (Toyota 4Runner Brochure, pg. 2).

Only in a few instances did the SUV's trip purpose align more with that of a large truck. In these cases, it was a reference to towing but that purpose was very different item than large

trucks. For instance, the Dodge Durango argued that the vehicle could "haul those heavy water toys out of the water with ease" (Dodge Durango Brochure, pg. 18) and the Ford Explorer features were useful on "boat launch ramps" (Ford Explorer Brochure, pg. 13) . The Toyota 4Runner and Ford Explorer also incorporated some elements of off-road capacity within the trip purpose but there were also closely related to mobility. In these cases, the purpose of the SUV was to possess the off-road capacity to that the user can maintain a high level of mobility which was absent in crossover vehicles.

The SUVs trip purpose was primarily that of a "friends-and-family" road-trip vehicle able to bring along recreational vehicles. This automobile dependence theme is one of the few themes that give greater insight into the CAFE vehicle classification. Because SUV focus on transporting passengers along with recreational vehicles, the message was nearly identical to the CAFE rule of what defined a passenger vehicle *"all sedans, coupes, and station wagons manufactured primarily for the purpose of carrying passengers and including those passenger cars pulling recreational or other light trailers*" in the original regulation. The only exception to this definition and the marketing is that a few SUV marketed some off-road ability, but these vehicles were not marketed primarily for their off-road ability. This is one of the few cases where the manufacturer marketed trip purpose directly within an automobile dependence theme, and it did not occur in other passenger vehicles and some light-duty trucks. If trip purpose was coded within passenger vehicles, it was for specific trips such as grocery runs, which were not stated within fuel economy regulation. However, SUVs marketed their trip purpose within regulated guidelines making the distinction between dependency and regulation much less clear.

Location and freedom were the least coded themes but even at 10 percent, freedom was an interesting anomaly. Freedom, which was an missing or extremely rare in other vehicle types,

154

occurred in three vehicles; once for the Toyota 4runner and Acura RDX while the Ford Explorer featured freedom twice. Yet the appeal to freedom is more akin to the ability to control mobility. For example, the Ford Explorer offers freedom by allowing the consumer to control the off-road setting so the user is free to choose (Ford Explorer Brochure, pg 5). The Toyota 4Runner offers adventure that is "planned on the fly" when asking if the consumer is a "4Runner type" (Toyota 4Runner Brochure, pg. 2). As a result, this type of freedom to have adventures on the fly is a mix of the 4Runner lifestyle and mobility. SUV appear to have much more interconnected automobility themes that were less apparent in other vehicle types and it makes sense considering the roughly even distribution of the themes. While large passenger vehicles were mostly concerned with status and alternative fuel vehicles were focused on lifestyle, SUVs are creating their own brand of automobile dependence where the hyper-mobility, freedom, specific trips create the SUV lifestyle which then infers a certain status.

SUVs are, perhaps, the most difficult vehicle to pin down to a specific purpose or theme. It is not because they do not offer information to the consumer, but rather they offer everything to the consumer. Basically, the SUV is all vehicles to all people. The universal quality of it makes the SUV the ideal vehicle of choice for many American consumers. Considering Kline & Pinch's analysis of the adoption of the automobile for rural consumers, a vehicle that is adaptable for all purposes is the more desired vehicle, especially for rural-oriented consumers. Rural consumers and even those non-rural consumers who would like to fashion themselves as being rural look to the SUV as a multi-use passenger vehicle. This message is somewhat lost with the crossover vehicle as well as other passenger vehicles. Later in this study, the setting of the vehicle based on urban form will further inform which vehicle belongs in which environment, but SUV was in a similar situation of being completely separated from crossovers. Finally, the

connection to pickup trucks and SUV is at best, limited. While the SUV maintains some traces of being a truck, the vehicles are significantly different in automobile dependency themes.

Small Truck Profile

Small trucks possessed the fewest number of coded automobile dependency themes (13) out of any vehicle. This follows with the pattern that small trucks were the least textually coded vehicle, lacking both CAFE and automobile dependency themes. However, small trucks did make a strong mobility argument within their brochures. Mobility was coded five times within the brochures accounting for 38 percent of all automobile dependency themes. Location and lifestyle were coded three times each for 23 percent of the themes and both status and trip purpose was coded once. As a result, the small truck is a mobility oriented vehicle considering that no other vehicle type possessed more than 20 percent mobility in their brochures. The focus on mobility was evenly distributed among most vehicles with all small trucks, except the Chevrolet Colorado, with others featuring at least one mobility claim. However, it is important to note that the Chevrolet Colorado was one of the shortest brochures containing only four pages including the cover and legal information. As a result, the Colorado was only represented on two pages and the message was radically different from the other small trucks. Most small trucks focused on a recreational vehicle approach and the Colorado was the only to be focused on work use.

Small trucks focusing on recreational vehicle use is different from SUV or large trucks. SUVs and large trucks focused on transporting recreational vehicles while small trucks were

recreational vehicles. For instance, the Toyota Tacoma's first page states in big block letters

"You don't not build a truck like this to haul fertilizer" (Toyota Tacoma Brochure, pg. 2).

Figure 14: Toyota Tacoma 1

From the image (Figure 14: Toyota Tacoma) you can see the Tacoma off-road, speeding through

the desert with dirt bikes in the bed. This is a common theme for nearly every small truck. The

small truck's mobility theme is tied into the off-road ability and using the small truck as a off-

road recreational vehicle. Thus the mobility, trip purpose and location theme are interconnected

within the off-road recreational vehicle persona of the small truck.

Figure 15: Toyota Tacoma 2

The profile for the small truck is interesting as far as it is strongly tied into mobility and recreation. The trip purpose and lifestyle tie into the off-road mobility that the small truck provides. The small truck is not a lower-priced alternative for a large truck like the small passenger vehicle is for larger passenger vehicles, rather it is a vehicle type that is quite different. While small trucks, SUVs, and large trucks might share some overlapping duties such as towing recreational vehicles, the small truck is marketed as a recreational vehicle as much as a means to access recreational activities.

Large Truck Profile

The automobile dependency message for large trucks is mostly a message of lifestyle, trip purpose, and mobility. Lifestyle was the most frequent theme and accounted for 35 percent of all large truck themes. Trip purpose followed at 23 percent with mobility closely behind at 19 percent. The other themes were less frequent with location accounting for 12 percent and status and freedom accounting for 8 percent and four percent respectively. As a result, the large truck is

a lifestyle vehicle supported with claims for trip-purpose and mobility themes. Considering that large trucks are supposedly a purpose-built vehicle, a strong lifestyle theme was surprising. However, the strong lifestyle theme appears to be a means of expanding the truck's potential customer base beyond the work vehicle. The most heavily used lifestyle theme vehicle was the Ram 1500 (Coded with Dodge vehicles since traditionally the Ram was a vehicle model made by Dodge but it is now a standalone brand). The Dodge Ram had four pages with a lifestyle theme. In particular, the Ram 1500 features specific packages designed for different consumers. One of those packages is the "Outdoorsman" (See Figure 16: Outdoorsman).
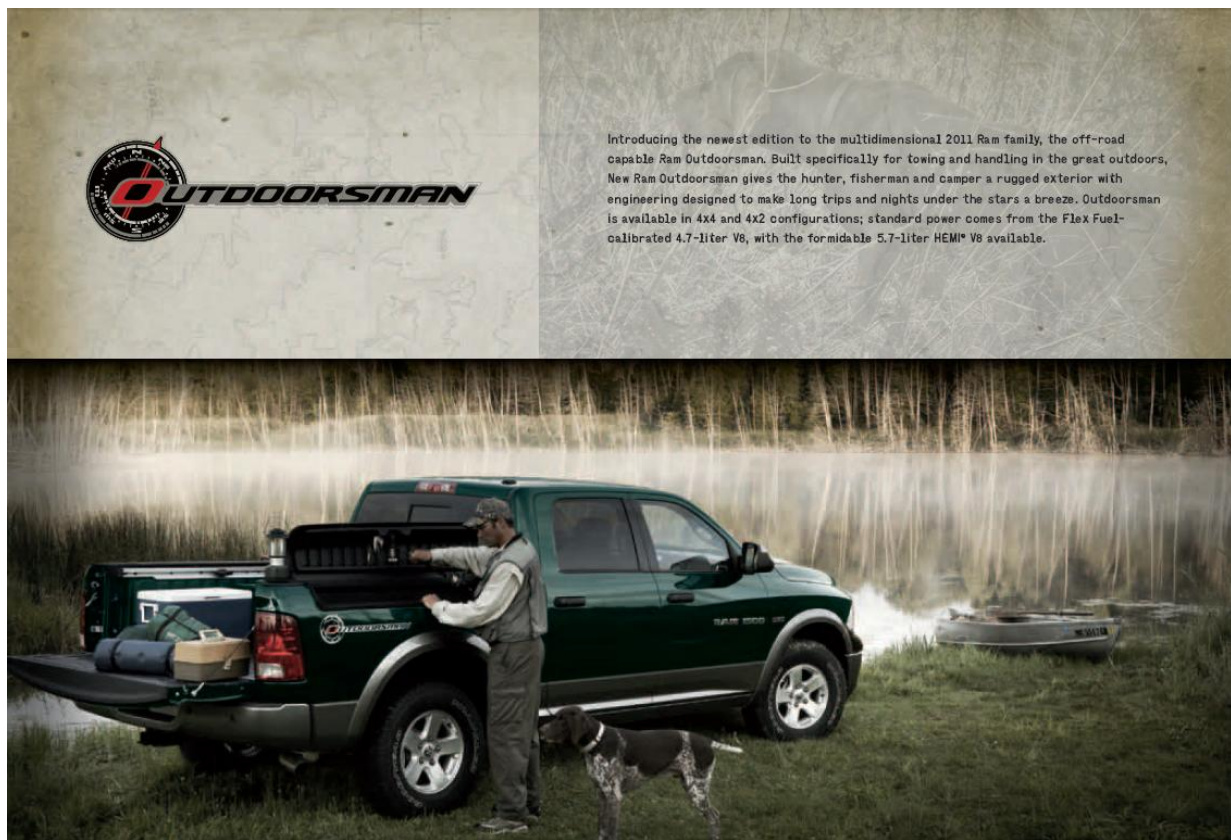
Figure 16: Outdoorsman

Ram states "New Ram Outdoorsman gives the hunter, fisherman and camper a rugged exterior with engineering designed to make long trips and nights under the stars a breeze" (Ram 1500 Brochure, pg. 15). The model also features camouflage seat patterns for that extra "outdoor"

touch. Marketing towards specific activities such as recreation activities is prominent within

large trucks but it is not as dominant as it appears in small trucks. Large trucks focus on

capability more than recreational activities, but there is a link between capability and recreation.

The second most common theme is trip purpose. For a large truck, a strong trip purpose theme

makes sense as large trucks are intended to be a purpose built vehicle not centered on the

transportation of passengers but on other utilitarian uses. For example, the Toyota Tundra argues

"Doing the job right requires the right tool for the job... brings some serious muscle to the task –

whether that means hauling, towing or simply heading home" (Toyota Tundra Brochure, pg. 6).

The Chevrolet Silverado keeps a simpler statement, "See the job. Do the job" when referring to

the abilities of the powertrain (Chevrolet Silverado Brochure, pg. 6). Later this argument is

continued expressing better performance when towing a trailer on the following page (pg. 7).

The large truck's trip purpose is directly tied into the vehicles ability to haul, tow, and transport

items. However, for many large trucks with crew-cabs, trip purpose includes transporting

multiple passengers as well. Like with the Toyota Tundra earlier comment of "heading home"

includes "the ultimate crew truck" and "Room for six" on page five of the brochure. While the

trip purpose is likely based on the powertrain abilities, the large truck is also courting potential

passenger use. Either transporting work crew members or families, it is important to note if there

is any change in the future if large trucks become more passenger oriented.

Mobility accounts for 19 percent of the large trucks' automobile dependency themes.

Much like the small truck, mobility is linked to the vehicle's ability to function off-road. For the

Chevrolet Silverado, mobility was coded with the same page as the vehicle's off-road claims.

Unlike the small truck, the off-road hyper mobility was present with large trucks, it just did not

dominate the large truck automobile dependency themes. As a result, mobility feeds into the

large trucks purpose for specific trips off-road rather than other theme feeding into mobility like with small trucks.

If any vehicle shares a similar marking approach to the large truck automobile dependency, it would be the alternative fuel vehicle. Both vehicle types share a similar total number is instances (See Figure 17: Similar Themes), both shared a similar number of instances

Figure 17: Similar Themes

Theme	Alternative Fuel Vehicles	Large Trucks
Mobility	14%	19%
Freedom	0%	4%
Status	5%	8%
Trip Purpose	32%	23%
Location	14%	12%
Lifestyle	36%	35%

per theme and the percentages were very similar. No other two vehicle types shared as similar of a message to the consumers as large trucks and alternative fuel vehicles. The only large difference is the nine percentage point difference between trip purposes. Otherwise, both vehicles focused on lifestyle the most, followed by trip purpose, mobility and location. Considering that these vehicles probably occupy the opposite spectrum of the automobile market, this is an unusual finding. If other vehicles share similarities within the automobile dependence themes there could be a better explanation. Considering that those searching for an alternative fuel vehicle would not likely consider a large truck or vice versa (although a hybrid pickup truck does exist), the study is left with the question as to why two completely different vehicle types would share a very similar message to consumer.

The best explanation is that both vehicles are marketing a similar automobile dependence message to two very different lifestyles. A more commute cost-conscious consumer or those seeking to be viewed as more environmentally conscious might never consider the truck, but they are basing their vehicle decision on the same themes. Likewise, the truck buyer with need of the abilities or those seeking to be viewed as holding the pickup truck lifestyle would never

consider the alternative fuel vehicle. These two vehicles are an example of how automobile dependence is marketed to different types of consumer social groups based on lifestyle, trip purpose, and mobility. If a manufacturer is able to tap into those three different themes, they can tap into very different consumer groups and remain effective. However, it is unfair to limit the automobile dependence theme into how two separate vehicle types are marketed because they are very similar. The other six vehicle types suggest that automobile dependence is fragmented rather than universal.

Fragmentation of Automobile Dependence

If automobile marketing material gives insight into how manufacturers communicate automobile dependence to consumers and vice versa, the brochures analyzed in this study suggest that there is more than one form of automobile dependence. Much like the fragmentation of the vehicle market for different vehicle types, brands, and price ranges, automobile dependency is also fragmented within the manufacturer to consumer dialogue. Different vehicles market different aspects of the dependency. One vehicle type, large passenger vehicles, focuses primarily on status. Small pickup trucks focus on mobility, while SUVs remain generalist. If the manufacturer to consumer dialogue is fragmented, then consumers' approach to their own automobile dependence construct is fragmented into different groups. Some groups might maintain an automobile dependent lifestyle for different reasons, thus making the challenge to overcome automobile dependency that much greater. If an anti-automobile dependence effort targets the automobile lifestyle or trip purpose, the effort would miss a market segment that places an emphasis on mobility or status. Automobile dependency and automobility is considered to be a systemic transportation issue with repercussions to urban form, economics, and the environment; however the manufacturer/consumer dialogue reveals that it is a

162

fragmented concept that distributed across different automobile dependency themes to different vehicle types. Thus there is not one form of automobile dependency, but many.

Image Difference

The image analysis of the vehicle brochures was different from that of the text analysis. While each theme within the text analysis was independent of every other textural theme, the image themes were tiered. For instance, the images were coded for being an exterior, interior, or partial view. If the image was coded as an exterior image, the coder would continue to code based on the exterior environment criteria whereas if the image was an interior or partial image, the coder would progress to the next image. If the image was coded as an exterior image, the coder would be instructed to code the image's environment as real, fantasy, or non-descript. As with the previous stage, if the image was coded as real, the coders were to code for the image's urban for as well as the road surface. If the image was coded as an exterior non-descript or an exterior fantasy, the coder would continue to the next image. The road surface is partially dependent on the urban form. Coders were instructed to use the type of pavement as clue to the image's urban form. Thus wilderness images would naturally exclude any paved road surface but some suburban images could be coded as off-road if the vehicle was parked on manicured lawn with other suburban visual clues. As a result, the coders were acting according to the coding logic defined within the coding instructions and as related to other themes.

The other implication resulting from the coding approach is that the resulting analysis is also tiered. The data analysis has divided the data into four levels. The first level is the basic image description of whether the image is of the vehicle's exterior, the vehicle interior, or a close up of a part of a vehicle or an image of a detached part of the vehicle (such as a wheel or piston). Within the analysis, the partial theme was dropped to create the *basic modified* tier. Significant

163

disagreement among the coders made generalization from the theme problematic. The partial theme was not significant to the study and was a category for coders to place images of vehicles parts while not straining to place and code the image with images of full vehicle shots. The second level is based on the environment of the vehicle which first determines whether it is real, non-descript, or a fantasy environment. From the environment analysis, urban form is addressed if the image is coded as real resulting in the third tier of the analysis. Finally, the forth tier is whether or not the vehicle is displayed on a road, on pavement, off-road but not in use, and off-road and in use.

The data was divided into the four tiers and tested for statistical difference with a chi-squared test within these tiers. The results were fascinating. On the basic tier of exterior, interior and partial images, the data could not reject the null hypothesis. Both the basic tier with partial images included (along with the high inter-coder disagreement) and the modified basic tier failed to meet the chi critical range. As a result, there is insufficient evidence to suggest that interior or exterior images occur more frequently with specific vehicle types. However moving past the basics images, the environment, urban form, and road surface all were able to reject the null hypothesis and are statistically significant at a confidence interval of 99 percent based on vehicle type (see Table 29: Chi square test). Based on vehicle types, the displayed environment is different. The urban form of vehicles displayed in a real environment is different and the road surfaces in which vehicles are displayed are different based on urban form.

164

Table 29: Chi square test

	Degrees of Freedom	X Critical 99%	X Critical 95%	X observed
Basic	22	40.292	33.922	27.02371
Basic Modified*	7	18.4751	14.067	7.435483
Environment	22	40.292	33.922	74.66545
Urban Form	30	50.894	43.777	239.7841
Road Surface	30	50.894	43.777	229.3503

Basic Tier Analysis

The basic image form lacked a statistical difference within the dataset based on vehicle type. Between interior and exterior images, there were 1032 total images with 656 images comprising of exterior shots and 376 consisting of interior shots. Thus on average, 64 percent of vehicles images were of the exterior of the vehicle while 36 percent were of the interior. Most vehicles maintained slightly more than one interior image for every two exterior regardless of the number of images per vehicle. The only two vehicle types with less than 63 percent of the images were SUVs and crossovers with 59 percent of the crossover vehicle coded as exterior and 57 percent of the SUVs comprising of exterior shots. However, once compared to the other vehicles in the study, such as all passenger vehicles and pickup trucks, the data revealed a statistically significant difference at 0.95 confidence that crossovers and SUV basic images are different from other vehicles (See Table 32: Crossover and SUV Comparison). As a result, crossover and SUVs are marketed differently despite a lack of difference based on vehicle type as a whole as well as lack of difference based on passenger vehicle or light-duty truck classification.

Table 30: Basic Image Results

Vehicle Type	Interior	Exterior	Interior Percentage	Exterior Percentage	Total Images
Small Passenger Vehicle	28	63	31%	69%	91
Medium Passenger Vehicle	60	105	36%	64%	165
Large Passenger Vehicle	48	81	37%	63%	129
Alt-fuel Passenger Vehicle	46	90	34%	66%	136
Crossover	55	80	41%	59%	135
SUV	53	71	43%	57%	124
Small Truck	28	60	32%	68%	88
Large Truck	58	106	35%	65%	164
All Vehicles	376	656	36%	64%	1032

Table 31: Basic Image Results

The overall lack of difference in the data is not without ramifications. Considering that the images cannot provide a difference between vehicle types, then the emphasis within the textual analysis about seating capacity, cargo capacity, luxury features and other CAFE relevant features becomes more important as to distinguish between passenger vehicles and light-duty trucks. This study did not analyze how many of the seats were visible per image, which might be a useful project for future research, but considering the difference within the CAFE themes and vehicle type with specific light-duty trucks out marketing their passenger capacity and family components, the lack of a difference in the images suggest that the interior is as important to all vehicles regardless of classification save for crossovers and SUVs.

Crossovers and SUVs are different from other vehicle types based on the interior and exterior percentages. However, individually each vehicle fails to reject the null hypothesis at a 0.05 change of a type-I error that the individual vehicle by itself is different from all other vehicles. However, SUVs, at a 90 percent confidence, are in fact different. Looking at the

similarities between the physical design of the vehicle of the crossover and SUV, it is easy to

explain why both crossovers and SUVs as a collective group would have a greater focus on the

interior of the vehicle. Both vehicle designs tend to have a greater total interior volume compared

to sedans and pick-up trucks, and manufacturers are displaying this advantage.

Table 32: Crossover and SUV Comparison

	Degrees of Freedom	X Critical 95%	X Critical 90%	X observed
Crossover and SUV Combined	1	3.8415	2.1056	4.1389
Crossover Only	1	3.8415	2.1056	1.8480
SUV Only	1	3.8415	2.1056	3.0298

Unfortunately, this study did not code if the image was showcasing the cargo volume or

passenger seating. Often, these interior images displayed both seating and cargo space but the

text can illuminate how the vehicle was displaying the interior. Both SUVs and crossovers gave a

greater attention to seating capacity, family units, transport of passengers, and cargo space. In

fact, both crossovers and SUVs were the top two vehicle types for seating capacity, transport of

passengers, and family units while only large trucks out stated crossovers and SUVs for cargo

capacity. As a result, the intent of both the crossover and SUV as a passenger-oriented vehicle to

transport passengers and their stuff appears within the images resulting in a slightly greater

number of photos of the interior in relationship to the total numbers of vehicle images.

The results from the basic analysis show that vehicles mostly stick to about a 2:1 ratio of

exterior images to interior images. Only SUVs and crossovers, when combined, show a break

from the pattern and offer slightly more interior images, and this distinction is in line with their

textual emphasis on transporting passengers. The result is that much of the visual marketing

within brochures focuses on the exterior of the vehicle. More importantly, this focus on the

exterior also makes the setting of the vehicle important. The setting in which a vehicle is

presented becomes a strong statement to the reader of the brochure. The presentation of the

vehicle is the mechanism in which the manufacturers can communicate the environment to the consumer which was mostly absent within the text.

Environment Tier

When it comes to the vehicle and the environment setting, some vehicles are just more real than others. Vehicles are presented differently based on vehicle type (see Table 29: Chi square test) and passenger vehicles are different from their light-duty truck counterparts (see Table 33: Passenger Vehicles and Light-duty Truck Difference). It becomes apparent that a vehicle's representation in different environments is important to manufacturers/consumer discourse. The images are very deliberate set and carefully chosen to appeal to the potential consumer. Non-descript backgrounds are backgrounds such as a white backdrop or a blurred setting that is unidentifiable to the viewer. Thus background is neutral for the most part. It basically does not offer information nor denotes purpose and is like to appeal to a wide variety of consumers without offending them. Fantasy backgrounds, on the other hand, are backdrops that include significant and obvious alterations to the scenery and include computer generated forms and image such as cartoon characters or landscapes. These images let the consumer either identify with the representation or reject it. A strong fantasy setting might lead to some consumers to consider the vehicle "silly" or a fantasy in and of itself. Finally, realistic backgrounds are actual environments that the viewer determines as being an actual place. Real images might not be any less fantastic than fantasy but they are idealizations and not cartoons with flowers blowing around it. Some real images are downtown urban or freeways areas without any traffic while other is pristine wooded areas but they are of places that actually exist like Detroit.

The inter-coder reliability for this section was generally strong. The coders agreed 90.2 percent of the time for this tier. This is weighted slightly by the larger number of real images that also showed the highest IRR of 0.94. Non-descript images shared an IRR of 0.85 while fantasy images were the weakest of the group with a IRR of 0.72. The disagreement from the coders appears to be related to the coder's option of whether or not the image underwent enough altering to be considered a fantasy rather than real or non-descript. The disagreement was spread across several vehicles and not more than two disagreements per vehicle. In some cases, images that were likely initially non-descript and then stylized often resulted in disagreement (see Figure 18: Ford Focus with fantasy disagreement among coders. As a result, the fantasy coding scheme allowed for more interpretation and a IRR of 0.72 is still quite usable considering the interpretation of the image. In comparison, the high agreement among the images coded as real suggest that even idealization of an image is not a significant factor for the coders to create disagreement.

Figure 18: Ford Focus with fantasy disagreement among coders

The importance of real images is that they are somewhat plausible to the consumer despite being idealistic. Strong connections to images coded as real provided the consumer with an authentic claim that the vehicle is a "real vehicle". As a result, the importance of how vehicle are portrayed is significant to the consumer.

Table 33: Passenger Vehicles and Light-duty Truck Difference

	Degrees of Freedom	*X* Critical 99%	*X* Critical 95%	*X* observed
Passenger Vehicles and Light-duty Truck Difference	2	9.2103	5.9915	20.5549

Passenger vehicles and light-duty trucks are portrayed in images in vastly different ways. Both vehicle classifications shared a near equal number of environment images with 309 images depicting light-duty trucks and 308 depicting passenger vehicle. However, the distribution varied. Only 69 percent of passenger vehicle exterior images were portrayed in a real environment while 81 percent of light-duty trucks image were coded as real. Passenger vehicles were slightly more likely to be portrayed in a non-descript environment than light-duty trucks but were five times more likely to appear in a fantasy environment (see Table 34: Environment Distribution based on Class). While this difference is even more pronounced with specific vehicles, there is little doubt which vehicles are real in comparison. There is little reason why a vehicle classification is marketed or should be marketed differently based on the environmental form. Slight differences might occur given chance, but the significance suggests that manufacturers are attempting to tap into, create, or control some element that places light-duty trucks as more legitimate, more real than passenger vehicles.

Table 34: Environment Distribution based on Class

Vehicle	Non-descript	Fantasy	Real
Passenger Vehicle	21%	10%	69%
Light-duty Truck	17%	2%	81%

With different types of vehicles, some are more real, some are more fantastic, and some are more generic or non-descript. The difference between environmental form and vehicle type was significant with only a 0.01 chance of a type-I error. All vehicle catalogs were comprised of mostly images with the vehicle in a real environment. Both medium passenger vehicles and alternative-fuel vehicles were portrayed in real environments the least at 63 percent while large trucks were almost always found in a real environment at 89 percent. However, the distribution of the real to non-descript and fantasy is important. For example, both medium passenger vehicles and alternative-fuel vehicles have the name percentage of real backgrounds but when compared to the next similar vehicle, the crossover, and the difference become more acute. Medium passenger vehicles and alternative-fuel vehicles have between 26 to 28 percent non-descript backgrounds and 9 to 11 percent fantasy backgrounds. Crossovers, on the other hand, are presented in fantasy environments 4 percent of the time. Drawing comparisons between vehicles is where the differences become more acute.

Table 35: Environmental Distribution

Vehicle Type	Non-descript	Fantasy	Real	Total	Non-descript Percentage	Fantasy Percentage	Real Percentage
Small Passenger Vehicle	3	9	49	61	5%	15%	80%
Medium Passenger Vehicle	28	9	64	101	28%	9%	63%
Large Passenger Vehicle	16	4	56	76	21%	5%	74%
Alternative-fuel Vehicle	18	8	44	70	26%	11%	63%
Crossover	21	3	52	76	28%	4%	68%
SUV	13	1	57	71	18%	1%	80%
Small Truck	8	0	48	56	14%	0%	86%
Large Truck	10	2	94	106	9%	2%	89%
Total	117	36	464	617	19%	6%	75%

Crossovers are coded as fantasy the most out of all light-duty trucks but that is less than any other passenger vehicle. Non-descript images were in the 21-28 percent range for most passenger vehicles. Only small vehicles were less at five percent. In comparison, other light-duty trucks were spread over a range of 9 per to 28 percent of the images codes as non-descript. From the trend going on order of crossovers, SUVs, small trucks, and finally large trucks, the number of non-descript images follows a patter than as these light-duty trucks progress from more

passenger usages to utility usages, the non-descript images decrease while the number of real

images increase (See Figure 19: Real and Non-descript Images for Light-duty Trucks).
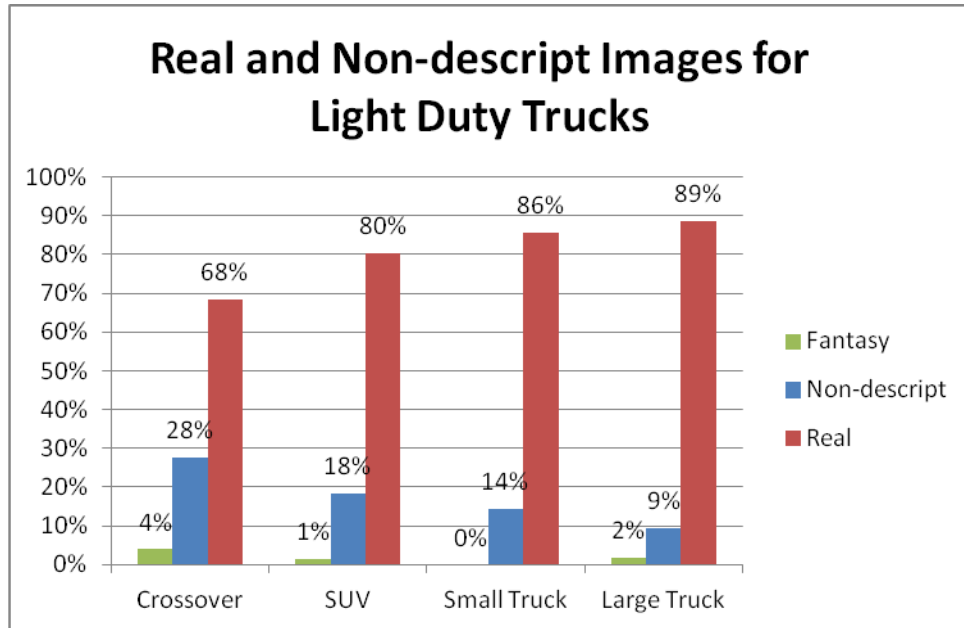
Figure 19: Real and Non-descript Images for Light-duty Trucks

While light-duty trucks share this pattern, passenger vehicles do not. It appears that the

manufacturers are giving the consumer more interpretation with the non-descript images with

passenger oriented vehicles, but with pickup trucks, manufacturers place these vehicles in real

situations that demonstrate their purpose. However, crossovers show a similar distribution to

passenger vehicles with a higher percentage of non-descript backgrounds with slightly more

instances of fantasy environments. Considering that much of the textual analysis suggests that

crossovers are more akin to the passenger vehicle than the light-duty truck, this similarity only

strengthens the argument that the crossover is a vehicle intended for passenger use.

Passenger vehicles shared the greater percentage of fantasy environments as well as non-

descript backgrounds. Unlike the light-duty truck, they do not share a pattern of transition within

their environmental form images. Fantasy elements decline if one considers alternative-fuel

vehicles to be "between" small and medium passenger vehicles in the automakers line-up. This may hold true with the Toyota Prius between the Corolla and Camry or the Honda Insight between the Civic and Accord, but it does not apply to the Chevrolet Volt and the Lexus CT-H. Only the small passenger vehicle was outside the non-descript passenger vehicle pattern, but it had the greatest percentage of fantasy backgrounds (Figure 20:Environmental Form and Passenger Vehicles).
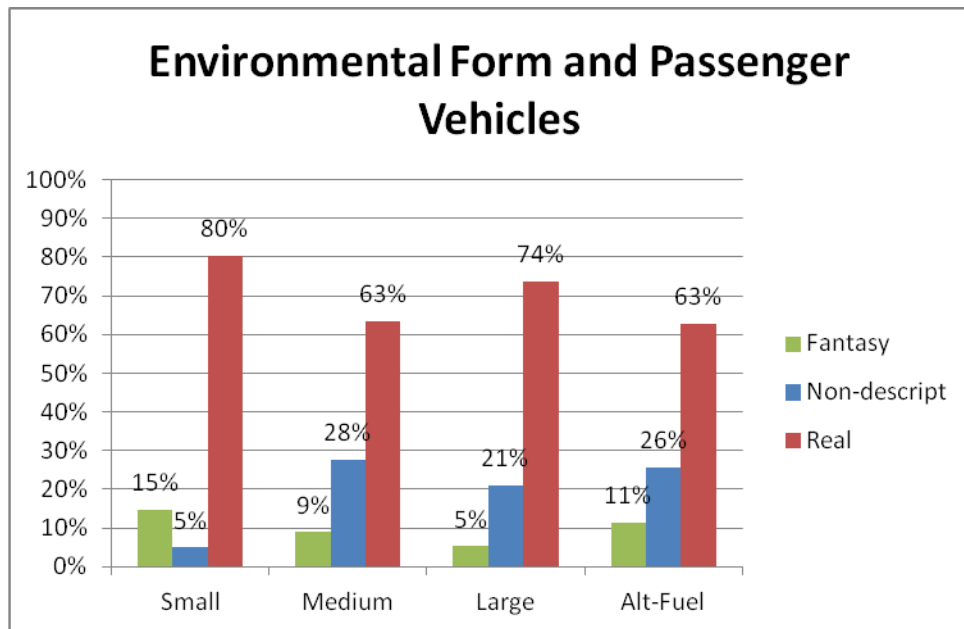
Figure 20:Environmental Form and Passenger Vehicles

Passenger vehicles were less intent on showing their purpose than light-duty trucks based in the lower number of real images, but small vehicles maintained a high "real background" percentage so the next tier of urban form becomes important for the small vehicle. The high amount of fantasy backgrounds for both small vehicles and alternative-fuel vehicles is something of concern. Many of the fantasy representations are based on exaggerated visual claims to other attributes. The over-reaching claims are detrimental to overall adoption as a vehicle choice. True, these vehicles might be targeting younger buyers that might accept the positioning of the marketing campaign more than other consumers but the problem of showing flowers blowing

over a hybrid or a blurred sparkle of a small vehicle is in stark contrast to pickup trucks with

mud on the doors. Sure, this mud might be the same touch as the sparkle in the headlight but

mud has an authentic quality with a truck while that sparkle might be considered inauthentic and

fake, the flower lining the way is definitely a fantasy unless the vehicle in front is an overturned

florist vehicle.

Figure 21: Toyota and Honda Fantasy

Unlike the pilot study, this image analysis did not include vehicles classified as sub-

compact. In the pilot study, these vehicles were more likely to include cartoons and fantasy

elements. It could have been useful to include sub-compact vehicle within the study for this

particular reason but both alternative-fuel vehicles and small passenger vehicles maintain some

elements. With a contrast to the near silence of fantasy element with light-duty trucks, the

findings parallel the pilot study although the distinction is not as clear.

Urban Form Tier

Much like the environment tier, the urban form tier showed that urban form background

varied depending on vehicle type (Table 36: Urban Form). Naturally, this tier of analysis is

dependent on the previous tier being coded as real. As a result, the number of images coded for

the urban form between vehicle types is that of the number of real images coded during the

environmental stage. Large trucks with a greater number of total exterior images with real

backgrounds comprised of the largest group with 96 images coded for urban form despite only

five vehicles included in this study. Medium passenger vehicles followed with 67 images coded for urban form and the rest were between 49 and 58 images. Only alternative-fuel vehicles had fewer with 42 images, but this number is in part because only four vehicles qualified for the study. Thus the number of vehicles plus the number of real images affects the amount of urban form displayed for each vehicle.

Table 36: Urban Form Significance

	Degrees of Freedom	*X* Critical 99%	*X* Critical 95%	*X* observed
Urban Form	30	50.894	43.777	239.7841

Both the percentage of distribution and the total number of images presented to the consumer are important. The percentage is important for describing the profile of where a vehicle is to be operated when in a real environment . The total number count is important for expanding the urban form into a full image profile for a vehicle and comparing it against the other tiers of the image analysis. For the total number of urban form distribution, the number of images is important. The number of medium passenger vehicles in urban environments (38 images) is roughly equal to the number of large trucks in rural environments despite the percentage of medium passenger vehicle in urban environments (57 percent) and large trucks in rural environments (27 percent) is very different. However, when the data is compiled along with the environment tier with fantasy and non-descript images, medium passenger vehicles are still predominately depicted in urban environments. The percentage drops to 23 percent due to a high number of non-descript and fantasy, while in the large trucks category, rural images account for 22 percent. Thus the difference is minimal once again. The discussion of the combined environmental and urban form, as well as road surface is discussed in the next sub-chapter on Vehicle Profiles, following the discussion of urban form.

Table 37: Urban Form Distribution

Vehicle	Urban	Suburban	Rural	Wilderness	Total
Small Passenger Vehicle	38	3	8	0	49
Medium Passenger Vehicle	38	8	19	2	67
Large Passenger Vehicle	25	14	17	2	58
Alternative-fuel Vehicle	18	16	8	0	42
Crossover	22	21	8	1	52
SUV	14	4	18	21	57
Small Truck	6	0	11	33	50
Large Truck	14	18	37	27	96
All Vehicles	175	84	126	86	471

The distribution of the image type varies specifically based on the type of vehicle. Specific vehicles are marketed towards specific urban form markets when the vehicle is presented in a environment that is not fantasy or non-descript. For example, small passenger vehicles appear in urban environments 78 percent of the time while small trucks appear in urban environments 12 percent of the time. As a result, urban environments are generally the most presented environment in the brochures and account for 37 percent of all urban form coded images. Urban environments are followed by rural environments representing 27 percent of the urban form and then both suburban and wilderness rounding out the fewest urban forms at 18 percent although wilderness themes have two total number of images more than suburban images. The higher number of urban images as a percentage is not surprising mainly because almost all vehicles had a few urban image at the least. Only small trucks did not represent an urban environment behind the vehicle frequently. In comparison, all passenger vehicles and crossovers only accounted for five wilderness backgrounds and no more than 3 percent of the vehicle background images.

Table 38: Urban Form Distribution Percentage

Vehicle	Urban	Suburban	Rural	Wilderness	Total
Small Passenger Vehicle	78%	6%	16%	0%	100%
Medium Passenger Vehicle	57%	12%	28%	3%	100%
Large Passenger Vehicle	43%	24%	29%	3%	100%
Alternative-fuel Vehicle	43%	38%	19%	0%	100%
Crossover	42%	40%	15%	2%	100%
SUV	25%	7%	32%	37%	100%
Small Truck	12%	0%	22%	66%	100%
Large Truck	15%	19%	39%	28%	100%
All Vehicles	37%	18%	27%	18%	100%

All passenger vehicles as well as crossovers were placed in urban environments the most frequently. Crossovers continued their similarities with passenger vehicles into the urban form images categories. Alternative-fuel vehicles and crossovers have a strong suburban presence with 38 percent and 40 percent suburban images respectively. While this did not outweigh the amount of urban images for either alternative-fuel or crossover vehicles, it was nearly the same amount.

This urban/suburban position of alternative-fuel vehicles and crossovers presents bother vehicles as an urban/suburban alternative to other options. The alternative-fuel vehicle is the environmentally friendly version of automobile dependence for those in urban/suburban locations while the crossover is the more urban/suburban friendly version of the SUV. The alternative-fuel vehicle removes the guilt associated with consumers that might be conscious of their impact on the environment or of their automobile use but are unwilling to alter their automobile behavior as a mode choice. Crossovers are the SUV alternative for the urban and suburban consumer. Like the alternative-fuel vehicle, the crossover is the SUV but without the guilt or negative labeling associated with SUV use. Considering the textual component with the crossover's focus family, seating, and transport of passengers, the crossover is the multi-purpose passenger vehicle for urban/suburban market.

Large passenger vehicles also maintained a moderate suburban theme at 24 percent. Small passenger vehicles, SUVs and small trucks were nearly silent in the suburban category. All vehicle types portrayed a moderate rural count with most vehicles displaying between 15 and 30 percent of their images in rural setting.

The concept of hitting the open road was present as much of the rural landscape was the roadway moving through an undeveloped space (mountains, forests, and coastlines). Large trucks and SUVs displayed rural images the most as a percentage of their urban form backgrounds at 32 percent for SUVs and 39 percent for large trucks. The large truck's approach to rural-ness was to connect with agriculture, and it was a frequent image for a truck to be involved with farming or resource production such as timber. On other hand, the SUV rural images were associated with road trips or recreational trips akin to other passenger vehicles hitting the open road. With wilderness images, small trucks, SUVs and large trucks were the only vehicle types with significant number of backgrounds (See Figure 22: Large Truck and SUV in Rural Setting for an example). Wilderness accounted for two-thirds of all small truck backgrounds, far more than any other vehicle. SUVs also displayed more wilderness backgrounds than other rural, suburban, or urban backgrounds. Large trucks were displayed in wilderness environments 28 percent of the urban form images.

Figure 22: Large Truck and SUV in Rural Setting

The trend among the environment where vehicles are presented follows along similar groupings within the vehicle categories. There is a pattern similar to a spectral shift. Small and medium passenger vehicle show a strong urban presentation. Large passenger vehicles, alternative-fuel vehicles, and crossovers are displayed across all forms of human development, save for wilderness, which lacks human development . Alternative-fuel vehicles and crossovers reserve a greater focus to suburban environments than other vehicles but feature less rural settings than medium and large passenger vehicles. Finally, you have SUVs, small trucks, and large trucks that progress to rural and wilderness environments. This shift is visualized in Figure 23: Urban Form Distribution.
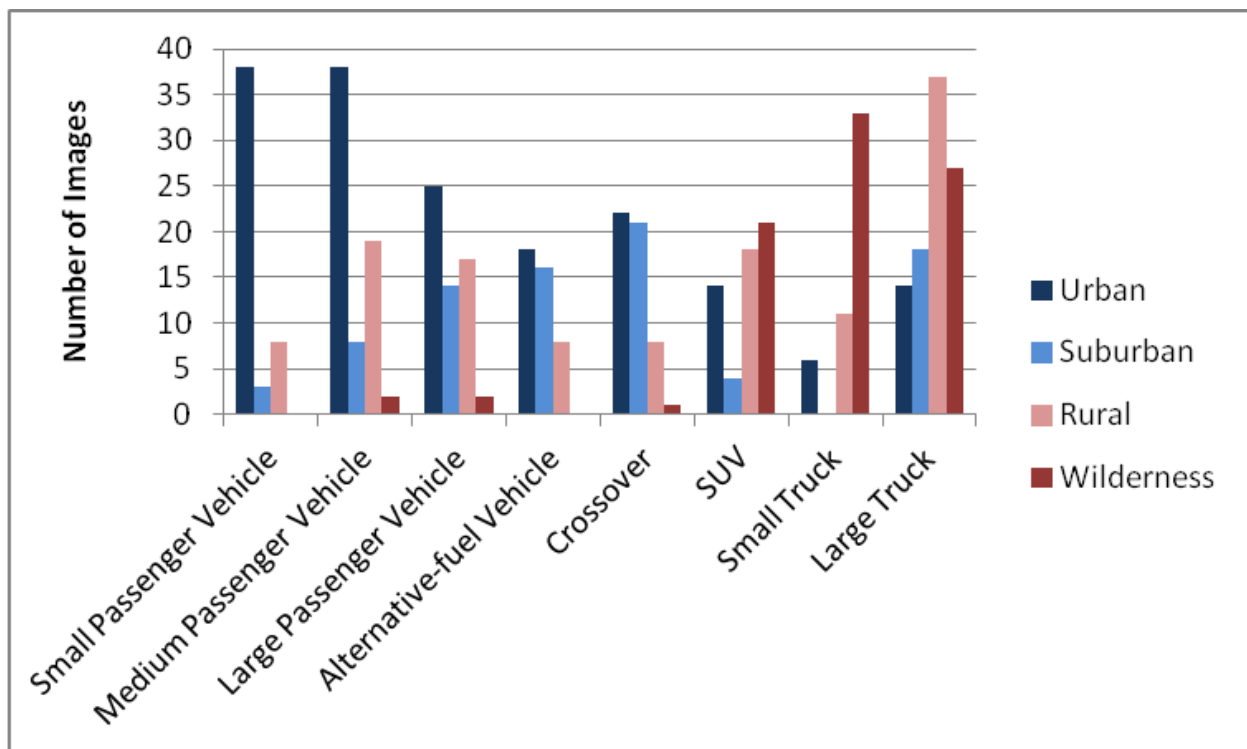
Figure 23: Urban Form Distribution

The implications of this shift of land use by vehicle type are that the ads are communicating which type of vehicle is appropriate to the consumer based on land use. If the vehicle's background identifies with the consumers perception of their own urbaneness/ruralness, then the

vehicle may be considered more favorably. Keep in mind that many of these vehicles also include strong lifestyle themes within the text. As a result, if the manufacturer can connect and influence what is considered to be a urban lifestyle and what is a rural lifestyle, then they would further that marketing niche to their advantage.

Consider each passenger vehicle to be an ever declining scale of urban density. With the shift with vehicle and urban form, urban density decreases as the standard fuel passenger vehicle grows larger. Urban density is greatest with the small vehicle with very a high percentage of urban images and very little suburban and rural background images. This transitions to both mostly urban and some rural form for the medium passenger vehicle. Finally, with large vehicles urban backgrounds are fewer than the combined suburban and rural images. Now a likely argument is that the size of vehicle is tailored to a specific market and that small cars are naturally urban vehicles with their smaller size and better fuel economy. The first problem with this idea is that this study did not included the smallest of the vehicles within the manufacturer's lineup often considered to be sub-compacts that are also known as "city cars," such as a Smart Passion For-two or even the Honda Fit, Toyota Yaris, or Ford Fiesta. As a result, this study began with slightly larger models, predominately sedans as the small passenger vehicle and not smaller sub-compact hatchbacks to tease out any intentional market bias for city cars. The other problem with assuming that the small passenger vehicle is naturally a more urban vehicle is that the alternative-fuel vehicle does not share the same urban form distribution. The alternative fuel vehicles share many similarities with the small passenger vehicles such as interior volume, engine displacement (excluding the battery), and a similar distribution of CAFE oriented themes, lifestyle themes, and fantasy images. As a result of the increased fuel economy and similar

platforms, one would expect for alternative fuel vehicles to be at least as urban as the small passenger vehicle but that was not the case.

One explanation for the difference could be the price. Alternative-fuel vehicles were the second most expensive passenger vehicle, ahead of small and medium passenger vehicles and just behind large passenger vehicles based on starting MSRP. When the alternative-fuel vehicle is inserted in between the medium and large passenger vehicle within the urban scale, it fits (see Figure 24: Urban Scale and Passenger Vehicles). While price might have a influence with urban form, it seems odd. While rural environments and urban form are often consider more authentic and natural, they the populations tend not to be considered to be more affluent. In addition, both types of pickup trucks are less expensive than alternative-fuel vehicles but were not often presented in a urban environment. Price might provide a reasonable explanation for the alternative-fuel vehicle's urban form, it does not apply the different vehicle types across the board.
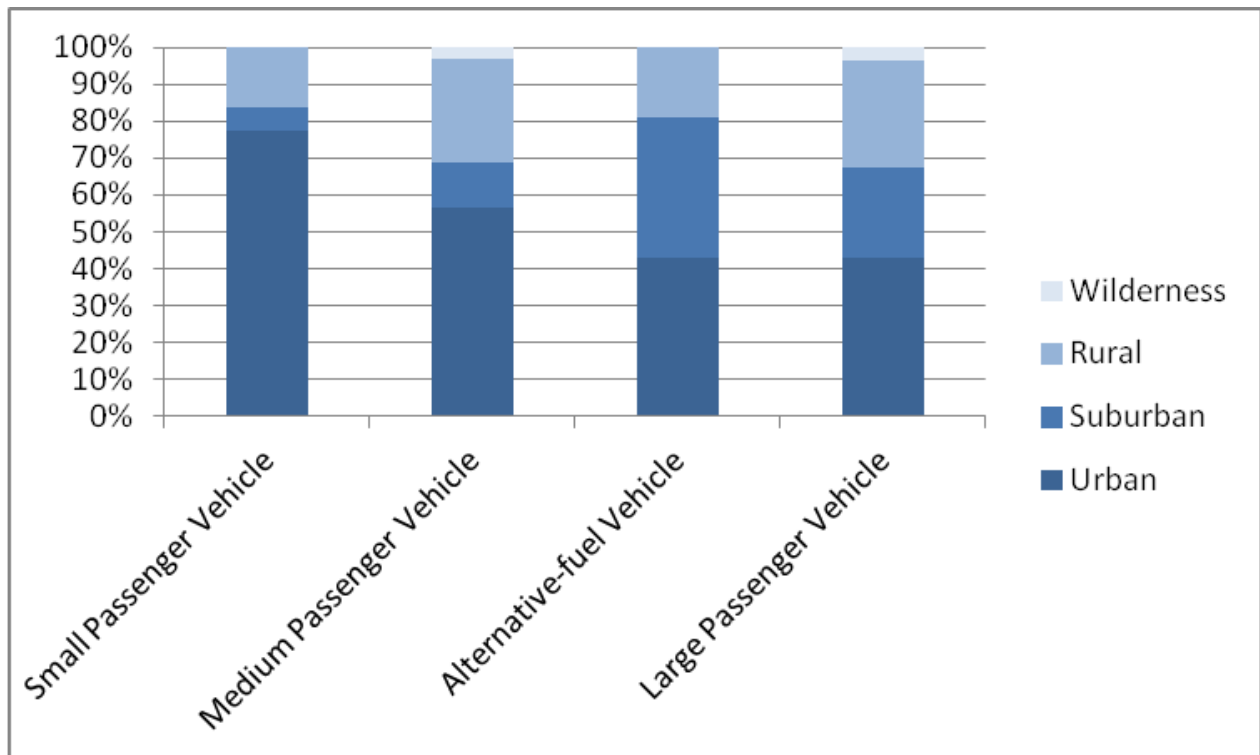
Figure 24: Urban Scale and Passenger Vehicles

There is a trend in the total number of suburban images across vehicles targeting

passenger uses (passenger vehicles and the crossover vehicle). Ignoring the SUV for the moment

due to a focus on the rural use, passenger vehicles and crossovers show a pattern of increasing

suburbanization. Beginning with the small passenger vehicle, the number of suburban images

increases as vehicle size increases to large passenger vehicles. After traditional-fuel passenger

vehicles are included, alternative-fuel vehicles continue the trend of increasing suburbanization

that ultimately cumulates with the crossover vehicle as the vehicle with the greatest number of

Suburban Shift Percentage
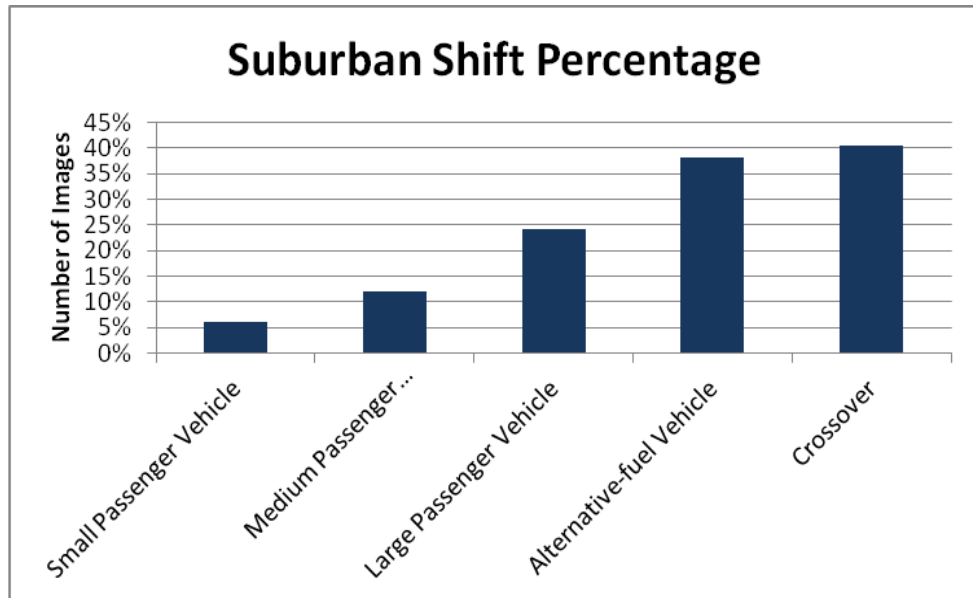
suburban settings

Figure 25: Suburban Shift). This trend does hold with the percentages of the suburban

environment but the gap between the crossover and the alternative-fuel vehicle is reduced

creating a stronger claim that both of these vehicles are the suburban vehicle of choice.
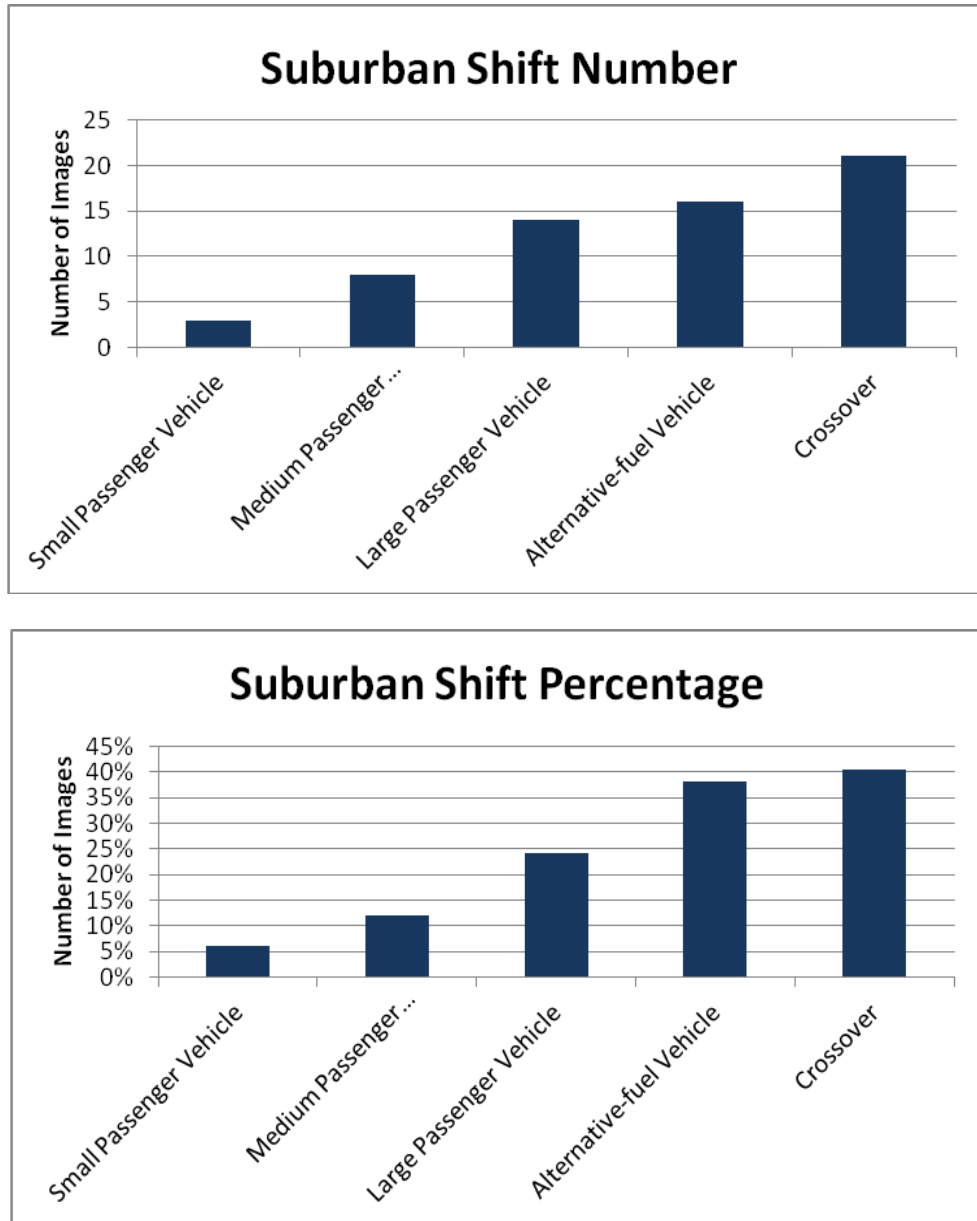
Figure 25: Suburban Shift

Light-duty trucks did not experience the same shift in urban/suburban form as seen with passenger vehicles (see Figure 26: Urban Scale and Light-duty Trucks). Crossovers maintained a large degree urban-ness compared to other light-duty trucks. Crossovers were very similar to alternative-fuel vehicles in their distribution and could be inserted into the passenger vehicle distribution as a vehicle in between medium and large passenger vehicles for urban form,

whereas light-duty trucks diverge from passenger vehicles is the higher percentage of rural and wilderness themes. Large trucks and SUV were similar with large trucks being slightly more urban. Small trucks were mostly just wilderness or rural focused so the scale never occurred.
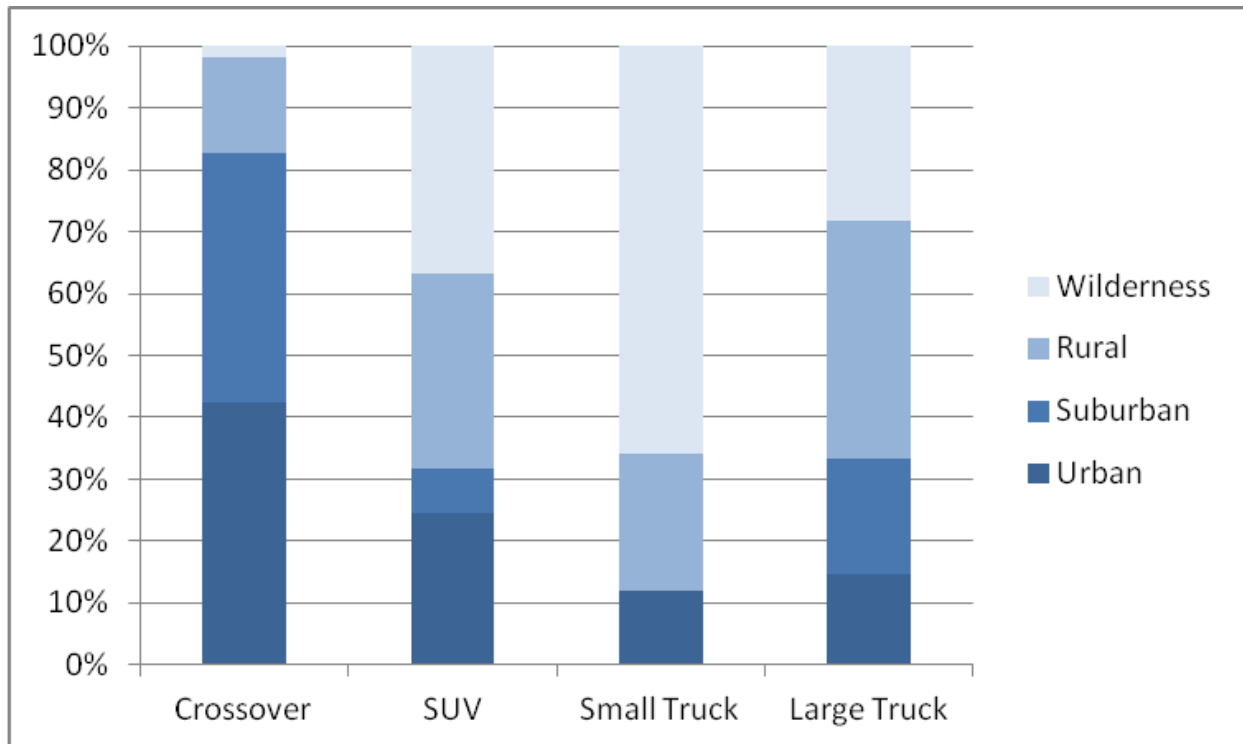
Figure 26: Urban Scale and Light-duty Trucks

The consequences of the urban shift are challenging because of two issues. The first is that vehicles tend to be less fuel efficient is being marketed towards lower urban densities. The lower the density, the more likely transit and other mode choices are to be absent. The second issue is that lower density environments will likely have increased distance between basic services and destinations. As a result, the vehicles marketed towards the most inelastic populations are the least efficient vehicles. SUV images portray the vehicles as the rural/wilderness passenger vehicle while small vehicles are nearly silent in the same categories.

Adding CAFE regulations into the discussion complicates the issue further. The multi-purpose passenger vehicle aspect of the SUV and crossover is making both vehicles alternatives
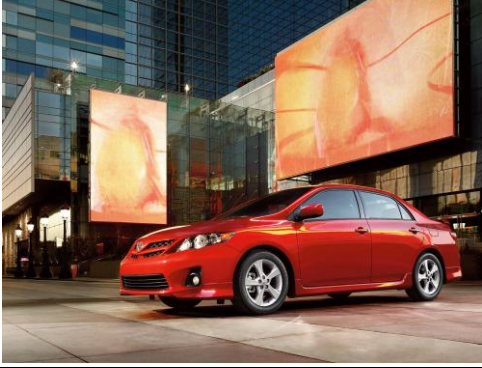
for different passenger vehicle in urban environments for the crossover and rural environments for the SUV. The next image tier connects back with CAFE standards for light-duty as it is connected to off-road capacity. This final tier should better clarify which vehicles are marketing off-road capacity for specific purposes.

Road Surface Tier

The Road Surface Tier was the measure of how frequently vehicles were portrayed on various road surfaces. This image tier is important to measure how a vehicle is or is not marketing off-road capacity towards consumers. The coding classification is very specific. If the image was coded as being a real image, the coders were prompted to code the surface the vehicle is either sitting on or driving on. The images were broken into four categories; on-road, on pavement, off-road but not in use, and off-road and in use. The on-road coding scheme included images in which the coders could clearly identify that the vehicle was on a roadway. If the coder was unable to determine if the surface was a road or street but it was a paved surface, then the image was coded as being on pavement. Other surfaces such as driveways, concrete slabs, parking lots were included on the pavement coding scheme. If the coders clearly could tell that the vehicle was not on a roadway or paved surface, then they were instructed to code the images as off-road and then determine if the vehicle was in use at the time of the image. As a result, the image analysis can differentiate between an image of a vehicle that is parked in a field or under some trees and a vehicle that is fording a river or crossing a dune. For examples, please see Table 39: Road Surface Examples. The image themes can be divided into two passive and two active vehicle actions based on road surface. Both *on road* and *off-road in-use* display the vehicle actively engaged in traversing across an environment's surface. Both *pavement* and *off-road not-in-use* are passive images whereby the vehicle is stationary (parked) within an environment. This

active/passive division allows for the vehicle's use based on suspension capacity and to be compared with textual themes within the CAFE analysis.

Table 39: Road Surface Examples

On road	On Pavement
Off-road, not in use	Off-road in use

Inter-rater reliability was generally strong with coding the road surface type. Overall agreement was at 85 percent with all four groupings, which is well above the 0.70 threshold. In addition, the chi-squared observed was greater than the chi-critical so as a result, road surface did vary by vehicle type.

Table 40: Inter-rater Reliability of Road Surface

Surface	On-road	Pavement	Off Road Not in use	Off-road In Use	Overall
Inter-rater reliability	0.87	0.84	0.79	0.86	0.85

Table 41: Chi-squared Observed for Road Surface

	Degrees of Freedom	X Critical 99%	X Critical 95%	X observed
Road Surface	30	50.894	43.777	229.3503

Table 42: Road Surface Distribution

Vehicle	On-road	Pavement	Off Road Not-In-Use	Off-road In-Use
Small Passenger Vehicle	65%	35%	0%	0%
Medium Passenger Vehicle	44%	53%	3%	0%
Large Passenger Vehicle	56%	44%	0%	0%
Alternative-fuel Vehicle	38%	57%	5%	0%
Crossover	42%	52%	6%	0%
SUV	40%	23%	23%	14%
Small Truck	15%	13%	26%	46%
Large Truck	11%	36%	24%	29%
All Vehicles	37%	39%	12%	13%

Nearly all vehicles were predominately displayed on a paved surface, either a road or parking lot. The only exceptions were the small truck and large truck. Both pickup trucks were featured as being off-road more than they were featured on a paved surface. Neither pick-up truck types focused on using the vehicle on the roadway with only 11 to 15 percent of the images displaying on-road use. On the other hand, both SUVs and crossovers were displayed on the road or on pavement more than they were shown as being off-road. SUVs displayed some off-road environments but most were settings for the SUV and not environments with the SUV traversing

across. Comparatively, SUVs were displayed on the roadways more than an alternative-fuel vehicle (40 percent compared to 38 percent).

Once again, the crossover vehicle was indistinguishable from other passenger vehicles and the distribution of road surface type was very similar to that of a medium passenger vehicle. With passenger vehicles, there were every few off-road images and when they were off-road, they were always not-in-use. Some passenger vehicles focused more on actively driving on a road while others tended to be parked on a pavement. There was not clear shift between road surfaces due to the size or the price of the vehicle as was seen with urban form (see Distribution Figure).
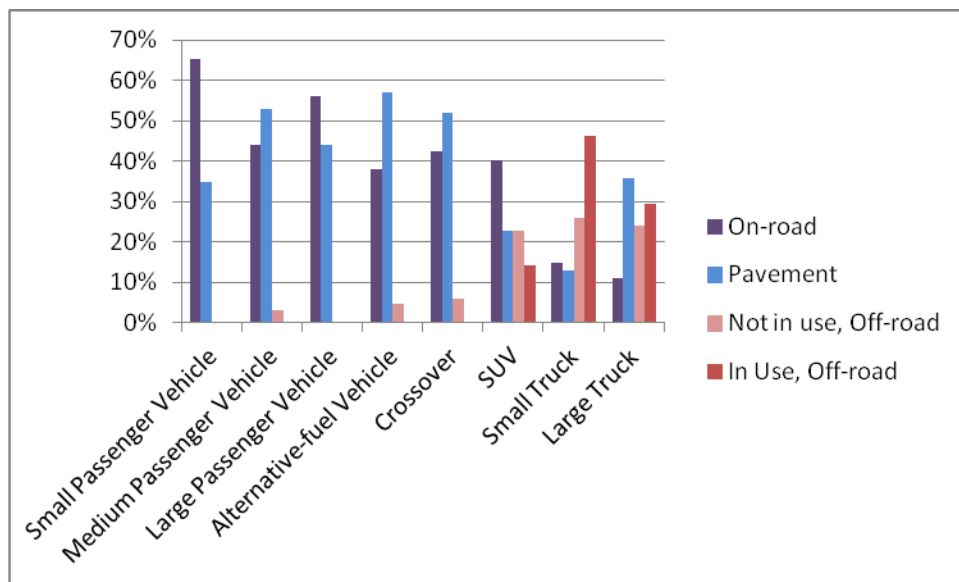
Figure 27: Road Surface Distribution

Now the major issue with the road surface and vehicle type is that the SUV, a light-duty truck that partially defines itself as an off-road vehicle, is predominately shown in an on-road road surface. This display of road use for the vehicle type is particularly problematic with the light-duty truck classification when compared to the textual CAFE analysis. The SUV is not devoid of light-duty truck themes, as it does have some display of light-duty truck themes within

190

the marketing material. However, the primary message of the SUV to the consumer is that the SUV is a passenger vehicle. It is a passenger vehicle without sacrifice.

The SUV as an off-road vehicle is only a minor attribute of the vehicle's purpose. The off-road capacity for the SUV is an additional feature on top of the on-road trip purposes. In many cases the off-road capacity is more of a safety feature for when road conditions are hazardous or it is portrayed as a hyper-mobility feature (see Figure 28: Off-road Ability Ford Explorer for example).

Figure 28: Off-road Ability Ford Explorer

SUVs do market off-road capacity but it is not the same as their pickup truck counterparts (both small and large trucks). Ignoring crossovers for the moment, since they are indistinguishable from passenger vehicles, SUVs and the other trucks are different with off-road marketing. One important distinction for SUVs and pickup trucks is that the off-road ability for the SUV is passive while the off-road ability for the pickups is active. Small trucks are nearly twice as likely to be in-use in an off-road setting as not-in-use. Large trucks are only slightly more likely to be in-use, but SUVs are pictured in use much less. Likewise, on-road use of the pickup trucks was sparse while it was the primary road surface for the SUV(see Figure 29: SUV and Truck Off-road Comparison). Large trucks feature a large proportion of the pavement setting but this is primarily because concrete factory or construction settings were common as was a four door truck (see Figure 30: Ram 1500 Warehouse/Factory Setting and Figure 31: Ford F-150 Warehouse/Factory Setting). Large trucks maintained a urban and rural work/productivity orientation within the marketing materials, but the SUV did not. The SUV's off-road was mostly passive compared to other trucks and the on-road focus was more akin to alternative-fuel vehicles than to other trucks.
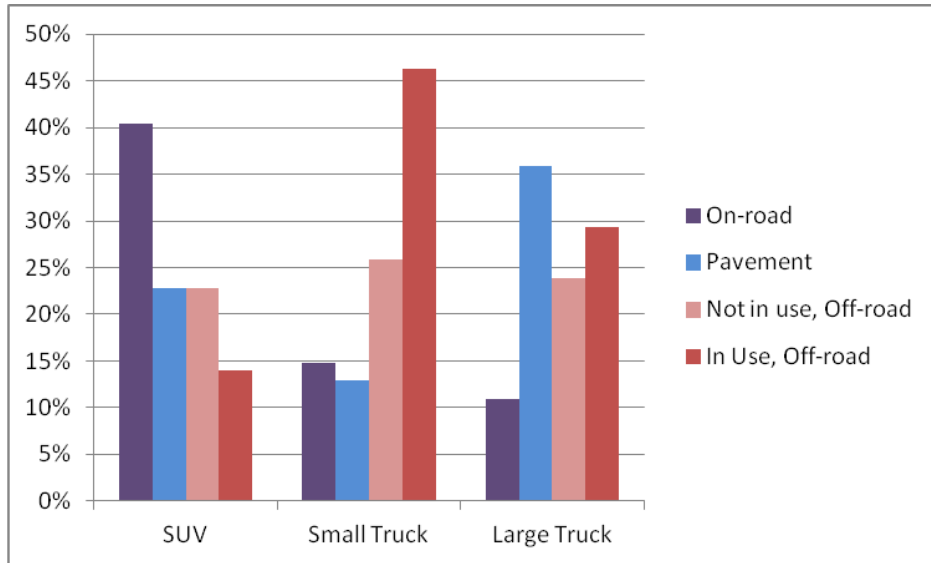
Figure 29: SUV and Truck Off-road Comparison

Figure 30: Ram 1500 Warehouse/Factory Setting

Figure 31: Ford F-150 Warehouse/Factory Setting

Combining the image analysis of the road surface with the textual analysis, the SUVs and pickup trucks show a similar pattern of on-road oriented themes compared with off-road oriented themes. As a result, the consumer is receiving complementary messages about the environment in which the vehicle is operated. With the SUV, the passenger vehicle textual themes within the brochures are always greater than the two pickup truck categories; small truck and large truck. Likewise, the light-duty truck themes are a smaller total percentage for the SUV compared to the truck (see Figure 32: Passenger and Light-duty Truck Themes).
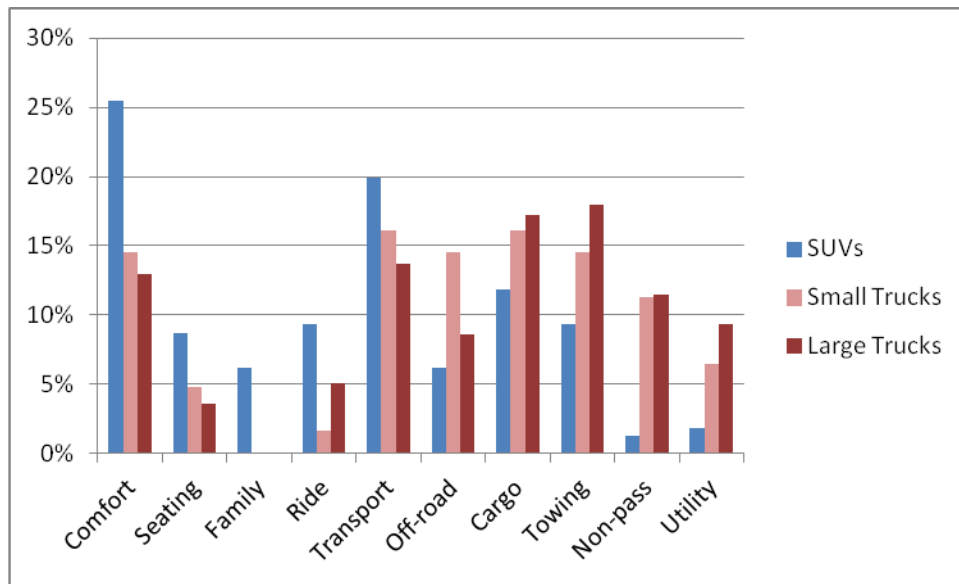
Figure 32: Passenger and Light-duty Truck Themes

Accounting for the ride quality and off-road CAFE textual themes and then comparing those to the on-road and off-road themes, SUVs appear to be on-road vehicles while trucks are off-road vehicles. For every page with an off-road textual unit for an SUV, there are 1.5 pages with a ride quality statement that is not off-road related. With the on-road/off-road images, it is very similar with 1.71 on-road images to every off-road image. Large trucks have a inverse pattern to the SUVs, with off-road themes out numbering on-road themes about as much. Small trucks are much more extreme with their comparison (see Figure 33: On-road to Off-road Ratio).

195

Figure 33: On-road to Off-road Ratio

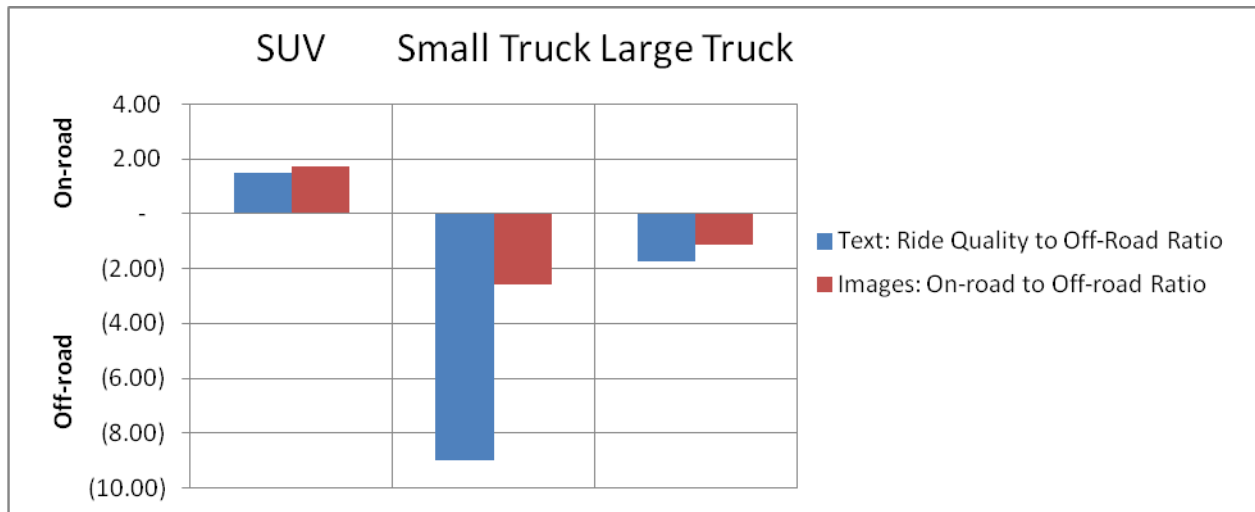As a result, the representation of the SUV is not of a light-duty truck but rather a passenger vehicle with some representation of additional capabilities. According to the images, the SUV is a passenger vehicle that can also tow, has some four-wheel drive/off-road ability, and is marketed for suburban and rural consumers. The basic tier of image analysis showed that SUVs were more concentrated on the interior and the road surface tier shared the same insistence as the textual analysis to show that the SUV was predominately an on-road vehicle. Whether or not these capabilities warrant relaxed fuel economy standards is not something that cannot be gathering from the brochures. Rather the brochures show that the manufacturers are marketing SUVs, as well as crossovers, to consumers with the primary intent of these vehicles are to be adopted for general passenger vehicle use. If the fuel regulations wish to define a vehicle based on the intended use, then the marketing material is the best indicator of how the manufacturers are selling these vehicles to consumers.

Image Discussion

The results of the image analysis provide the consumer something that the text did not: the appropriate environment. The images of the vehicle are the setting and staging for the

intended use. Images communicate the appropriate urban form, proper road conditions, and the appropriate level of reality and seriousness of the vehicle. While vehicles play into consumer fantasies of driving over dunes or saving the environment via automobile use, some of these fantasies are more serious than others. Small and alternative-fuel vehicles were generally less serious than other vehicles with a high percentage of fantasy environments. On the other hand, large trucks were serious (work) vehicles with percent of images being real. When passenger vehicles were portrayed in real environments, these vehicles were mostly displayed in urban settings, while SUVs and pickup trucks were mostly displayed in rural and wilderness settings. Finally, most vehicles, with the exception of pickup trucks, were displayed on roads or paved surfaces lending to the argument that both SUVs and crossovers are primarily intended for the consumer to adopt the vehicle for its on-road passenger use. The images are an interface between the manufacturer and the consumer whereby values of urban form and vehicle purpose are exchanged. This exchange works in a bi-directional pattern where manufacturers are providing information about the vehicle, and the consumers are providing feedback with vehicle sales. As a result, the image analysis provides vehicle profiles in which the major themes within the image analysis can extrapolate the communication between the manufacturer and the consumer.

Chapter Six: Discussion

The manufacturer-consumer dialogue within the brochures is directing specific vehicles for specific purposes and environments. On one hand, manufacturers are marketing light-duty trucks to consumers as passenger vehicles while manufacturers are steering consumer perceptions about when vehicles belong is different environments. The brochures themselves are an exchange of information for potential car buyers. Unlike TV commercials or banner ads, brochures are for consumers actively seeking information about a vehicle type. Consumers download or pick up brochures at a dealership; thus, it is an active, intentional act by the consumer seeking information. As a result, the information presented to the consumer is important because the consumer is actively searching for a vehicle that represents their identity.

On the other hand, the implication for urban planning due to vehicle choice is indirect. Marketing is a part of a greater transportation discourse, and the effects trickle down across multiple levels of planning. Automobile dependency is a global phenomenon that develops different attributes as different social-political areas adopt the automobile. Nations that regulate the vehicle ultimately change the country's relationship with the vehicle. Those regulations in turn affect how the consumer interacts with local and even regional aspects of urban planning. As a result, the indirect effect of vehicle adoption based on vehicle type adds another difficult-to-solve layer to the challenges facing urban planners when addressing automobile dependency.

Rather than developing a unified method for addressing automobile dependency, planners need to disaggregate the phenomenon. When planners are discussing automobile dependency, there is the possibility that we are discussing multiple issues. If planners are using the same term "automobile dependency" but are discussing different aspect of the dependency, it can be

confusing. Lucas (2008) argues that dependency of the automobile must be unpacked into different issues to avoid confusion (p. 17). Lucas goes on to state that:

> "we must be highly aware of the different kinds of drivers both in terms of their socio-demographic characteristics, social and psychological drivers and motivations, their economic and physical circumstances and their roles and responsibilities. The travel needs of each person will be different and the impact of enforced reductions in their car use will have different consequences for different people's lifestyles, some people are more resilient to change that others, some more vulnerable" (p. 17).

Thus as planners, we must unpack and understand this fragmented approach to automobile dependency. Manufacturers are marketing the use of the vehicle to a fragmented population, even if the manufacturers are aware of the divisions or not. Thus, the planner needs to understand that addressing automobile dependency in its various forms is a consumer decision whereby the answer is to purchase the automobile. Marketing influences/distorts that consumer decision. The vehicle brochures illustrate how dependency is fragmented within vehicle types and how those vehicle types are presented to the consumer for adoption. Thus, within this fragmented approach to automobile dependency, planners must also include the fragmented vehicle fleet and how the community is adopting different types of vehicles that were initially designed and regulated for different purposes. Successfully addressing automobile dependency includes tracking the vehicle types within a community and remedying physical factors in which planner can control through traditional activities.

Finally, local planner cannot directly change vehicle consumption or fuel regulations, but they can anticipate and remediate the effects by incorporating the public vehicle fleet within the community report and comprehensive plan as it relates to a local-level dependence on the automobile. Tracking and planning for the type of vehicle fleet in relation to land use, urban

form, and economic activity should yield how well a population can cope with a spike in fuel prices. An area with high automobile use and dependence combined with an inefficient fleet is a more sensitive population that those who have a more efficient fleet or alternative modes.

Vehicles and Urban Form

The relationship with vehicle type and the urban form in which the vehicle is presented is an important distinction within the data. Different vehicle types are displayed in different environments. Urban vehicles are passenger vehicles with the smaller passenger vehicle shown as more urban than the larger passenger vehicle. On the other hand, SUVs, small trucks, and large trucks are much more rural or wilderness-focused. Finally, crossovers are suburban vehicles. The marketing material is organizing specific vehicles for specific markets but it is not as simple as generalizing certain vehicles for certain urban forms. The use of rural and wilderness themes carry more weight within the automobile discourse and vehicles. Furthermore, the history of how the urban and rural populations adopt automobiles has permeated into modern advertising. General mobility is not a rural value and thus vehicles marketed solely for the mobility of the driver are marketing a spatial division among users.

Clout's (1984) third criteria of the rural include a strong home and local identity. Combining this principle with Marston (2000) and Lefebvre (1991)'s approach that space is a social product, vehicles marketed and placed within an environment, especially a rural environment, create a relationship with the consumer and the spatial identity of the customer. Thus marketing a vehicle in a rural environment seeks to persuade potential consumers through this connection, particularly the rural consumer, that the vehicle is a part of the home/local identity. As a result, the vehicle-type is part of the consumer's identity. This is furthered by Russell Belk's (1988) work that material objects are a reflection of the personal self. Vehicles

marketed in specific environments, especially inefficient vehicles in rural environments are more detrimental to the consumer base that that of those in urban environments. Marketing fuel inefficient vehicles to a population that lack alternative modes, inelastic fuel demands due travel distances for basic services, a strong identity towards mobility as independence, and a strong identity toward vehicle type and rural identity creates a unique challenge towards American automobile dependence and resource security.

As a result, the SUV, with both a larger percentage of rural backgrounds and even family-oriented textural themes, is focusing on any consumer who has a strong rural home/local identity. It is little wonder that American automakers have focused primarily on the SUV and have been able to successful market the vehicle to more rural and rural-minded populations. Consumer groups do not have to be rural to identify with the rural marketing material. A suburban or even a urban person can identify with rural themes but rarely does it flow the opposite direction. Rural spaces are widely understood (Hoggan 1990) but the space/vehicle relationship is also reflecting on lifestyles as well. Vehicles marketed within the rural landscape are connecting with in the concept of rural independence whereby the vehicle is central to providing that independence. That is why the SUV has a roaming-road trip quality in images and is augmented with text supporting the road-trip as a trip purpose. On the other hand, other vehicles are "urban" vehicles lack the associations assumed in a rural setting. The SUV is the *real* vehicle for rural consumers and for non-rural consumers seeking to escape urban and suburban entanglements. Not only is it for specific rural and wilderness environments, it also connects with the family and friends network. As a result, the SUV is the vehicle that allows one to share rural-ness and wilderness with one's social network.

Pickup trucks mix their urban form claims. Pickup trucks have urban factory claims, rural agricultural claims, and just about any construction project in-between. As a result, the pickup truck is an everywhere vehicle, unlike the small passenger vehicle. Yet, the pickup truck is more for wilderness and rural environments. The urban environments are less descriptive. For instance, a large truck in a urban environment would be in an empty warehouse, but the rural setting would show the truck on a farm with a load of hay in the bed or on a trailer. Furthermore, the large pickup trucks in this study contained rural/wilderness-specific packages such as the "Outdoorsman Package" with the Ram 1500. Even if the consumer is not buying that specific package, the vehicle is making a strong claim to holding those "outdoorsman" values as rural and wilderness imagery are used throughout the brochure. The other aspect that is important to note is that pickup trucks, and SUVs to a lesser extent, are marketed as multipurpose tools. For rural populations, vehicles must be multipurpose tools. Passenger vehicles are primarily marketed more as commuting-only vehicles for those going from home to employment and vice versa.

The passenger vehicle is not a means to conduct a work function either. Its single purpose passenger vehicle approach is not in alignment of how rural populations adopted the automobile. Kline and Pinch (1996) argue that driver mobility, a solely a urban attribute, is reflected within the marketing material with passenger vehicles in urban environment marketed as commuter transport. On the other hand, displaying an SUV or a large truck with convertible interior space or features within a rural or wilderness environment is the paramount image of a vehicle that is to be appealing to a rural customer.

Marketing rural and wilderness values are extends beyond addressing consumers in rural environments. Rural and wilderness play into a wider American social identity that lends greater authority within the message. Thus when a vehicle is marketed within a rural or wilderness

setting, it is marketed in a "honest and natural" of how automobiles "should" be. It gives the

consumer a chance to buy into the Jeffersonian ideal of how America used to or should be. It is a

very strong argument that appeals to consumers. It is a romantic attachment to the rural (Logan,

1997, pg 20). Within this rural-ness, other concepts are also linked to what is rural such as

American ideal of rural values: hard work, family, community, nature, and safety (p. 20). Thus,

the textual inclusion of family, passenger themes, location, and status that are common for the

SUV are reinforced through common associations with the rural and wilderness settings.

For the rural population, the automobile is a tool and mechanism for being rural while

for urban populations, the automobile is an escape mechanism. As a result, SUVs with their

significant road-trip and vacation themes appeals to urban population seeking an escape while

not alienating the rural population that sees it as a tool. This perspective on the rural-marketed

vehicles centers on the American appreciation for what is rural because it also associates hard-

work , independence, and honesty. A tool that encourages this perception, or better yet, embodies

the rural way can make arguments across the spatial association of the consumer. On the other

hand, vehicles marketed in urban environments do not share the appreciation, and vehicles

marketed as fantasy are definitely not tools to rely on. An "urban" vehicle cannot have the same

work ethic or honesty because it is not within that rural construct. As a result, the small

passenger vehicle and alternative-fuel vehicles lack the traditional arguments that have defined

how a vehicle is marketed to a rural population. Worse, the small vehicle, despite slightly better

impact on the environment, fails to connect with the environmental argument as well. Whereas

the rural activity is the human activity that is perceived to be more environmentally friendly, the

urban is not (O'Neill et al. 2008). Rural activities are often considered to be in harmony with

nature rather than in conflict. Therefore, urban imagery hurts environmental arguments that some

of smaller passenger vehicles attempt to make. Simply put, if a vehicle wants to make an argument for environmental values, wilderness is the background of choice, but a rural environment is the highest valued environment involving human culture and interaction with choice. Connecting the rural or wilderness with any vehicle implies a very strong message rooted American values.

If manufacturers are selling specific vehicles for specific urban forms, then it should be expected that certain urban forms *should* accommodate specific vehicles for those who own them. At least that is the potential mindset for the consumer. If they purchase a vehicle, the landscape should accommodate for that purchase. Thus, the scale of vehicle passenger-oriented infrastructure should match the scale of the vehicle. For instance, a population with a higher percentage of large trucks and full size SUVs would expect the parking spaces to be larger with greater space between parking lanes so that the vehicles can be maneuvered easily to accommodate their vehicle choice. On the other hand, traffic calming or safety infrastructures such as speed bumps or elevated walkway might change to address the vehicles driven. The type of vehicle owned by a population should conform to how that population interacts with their automobile landscape.

It is less of a problem for urban environments and urban-oriented vehicles as it appears that vehicles are trying to accommodate to specific urban limitations. The vehicle is designed for a specific space-limited environment. For example, smaller vehicles are marketed towards urbanized areas to meet specific space restrictions. It is much easier to parallel park a small passenger vehicle in a length oriented parking space than it is to park a full-size SUV. Thus if the streetscape limits parking or parking space length, then it has an effect on the vehicle that appears more practical. However, crossover vehicles appear to be trying to accommodate for

urban restrictions. From the brochures, the crossover is the "urban-SUV". Thus manufacturers are targeting more urbanized areas with a light-duty truck. They are fitting a truck to work in an urban and suburban environment.

The urban environment within the marketing of different vehicle types is important to both the consumer and those seeking to change consumer habits. When a product, such as the automobile, is presented within a particular form it has consequences that affect of a product is consumed and how a product is incorporated into those who identify with a particular urban form. The truck is a part of what Americans consider rural. Now trucks have applications beyond just the rural landscape, but that is not a part of the way American culture reflects and interprets the vehicle. SUVs, with a historical association with other trucks, are also linked to this rural identity. While pick-up trucks are more focus on being a tool for maintaining certain rural activities, the SUV is also a tool for those seeking to escape urban or suburban constrains. The SUV is the road-trip vehicle but remains a practical tool for other uses. On the other hand, passenger oriented vehicles are "one-trick ponies." They are urban commute vehicles. They serve a purpose but they are much less adaptable for other uses. This contradicts the historical trend that rural populations purchase multi-purpose vehicles. However, the rural vehicle is no longer the mobile source of power to run other machinery. Rather, it is mostly a passenger transportation tool now designed around transporting families and other passengers. The major problem with this is that those who are more dependent on a vehicle, such as rural populations, are being targeted to buy less fuel-efficient vehicles such as SUVs. Manufacturers are marketing certain vehicle types to specific urban forms that are inelastic in their vehicle/fuel use. Thus, the most automobile dependent are being targeted to drive the least efficient vehicles.

Challenges for Urban Planners

Much of the urban form and vehicle type discussion focuses around a consumer choice question/issue. As a result, addressing automobile dependence through addressing urban form often results in attempting to influence the consumer choice. However, marketing is also factoring into the urban form discussion by providing different urban form messages for each vehicle type. Therefore, the system of automobility continues to apply to local and national planning approaches and that pushes the discussion towards accommodation of automobile use and dependency. This is not a direct causal relationship but rather an indirect effect stemming from the permeation of dominant institutions that influence the discussion. Automobile brochures are advocating specific environments for specific vehicles during the vehicle adoption stage. The challenge for planners is that we have to be a voice of reason in community meetings, which are comprised by community, members/consumers that are inundated with marketing material designed to connect with the consumers through certain values often expressed within urban form. As a result, a community needs to track the type of vehicle adopted by the consumer, the public.

For the planner, there is a vital need to compare the urban form of a locality/region against that of the consumer vehicle fleet. This study shows how manufacturers shift the composition of a consumer vehicle fleet in the application of fuel economy standards. However, the implication of a shifting fleet suggests that in order to plan for the consequences of automobile dependence, planners must track vehicle adoption within their land use setting. From this information, a community can compare the vehicle fleet with the urban form of a locality to determine the level of automobile dependency of the users/public and identify the resistance of that locality to fuel price spikes. The availability to vehicle type owned within a community should be easily accessible through local/state departments of motor vehicles or through vehicle

tax databases. Adding information into the community report of the public's vehicle fleet should be possible. Localities that have a lower density and greater distances to travel for specific services coupled with a greater number of light-duty trucks might see a greater impact on the local economy due to higher fuel prices than a community that is more urban or has a higher percentage of passenger vehicles. Planners might not be able to change how manufacturers are marketing and selling vehicles, but planners can anticipate the consequences.

Vehicle Type and Automobile Dependency

Vehicle type and automobile dependency appears to be a very odd discussion topic as vehicle type assumes that there is a vehicle in the first place and thus assumes some sort of automobile dependency or relationship. However, how a consumer chooses their vehicles is in part a representation of how they approach the automobile. Not all vehicles create the same form of automobile dependence. The literature of automobile dependence and automobility appears to lump all vehicles the same group. Yet, the different vehicle types "flavor" automobile dependence in different ways. The type of dependency an individual might experience differs based on the attributes of the vehicle. The association with how a consumer approaches vehicle type and automobile dependency is very similar and perhaps follows the same guidelines. Thus addressing the automobile dependence of an urban individual driving a small passenger vehicle for mostly commuting purposes is radically different from those of a rural individuals using a truck for productivity purposes. The brochures suggest that automobile dependence is fragmented into different market segments. Thus addressing automobile dependency as a unified phenomenon might not be the most effective means of combating dependence.

Automobile Dependency within Vehicle Brochures

      The brochures place difference emphasis on difference automobile dependency themes depending on the type of vehicle. In a way, each vehicle type is targeting a different aspect of the automobile dependent consumer base. While mobility or hyper-mobility is often a key reason why individuals might be dependent on the automobile, that message is not uniform across vehicle types. SUVs in particular are much more insistent about their mobility ability. In fact, SUVs are much more vocal about automobility themes than any other vehicle in the total number of themes coded. However, the alternative-fuel vehicle shares the greatest number of automobility themes per brochure. However, hyper-mobility is not a major alternative-fuel vehicle message, rather it is a trip-purpose and lifestyle vehicle. On the other hand, large passenger vehicles are status vehicles. Thus, the manufacturers are targeting different spectrum within the automobile market.

      The impact of different vehicles filling different roles within the automobile dependency phenomenon suggests that automobile users are dependent for different reasons and that the dependency is reflected in the vehicles we purchase. The small passenger vehicle consumer's approach to their own automobile dependence is different from that of a SUV consumer, and the brochures reflect this. So the question becomes how does one address automobile dependency and vehicle type? If the brochures demonstrate how automobile dependence is fragmented and "flavored," then efforts can be tailored to reduce or mediate automobile dependency and its effect. For instance, the urban passenger vehicle commuter is likely easier to address/change than the rural farmer for their dependence on their vehicle. The urban commuter might have access to other modes of transport and might live in a less automobile-oriented community, but their automobile dependency is focused on lifestyle and status themes as suggested by the vehicle types targeting the urban commuter. As a result, efforts to address the urban commuter must also

target the same themes that the automobile manufacturers target. On the other hand, those seeking the address automobile dependency for rural populations would address a different tactic. Vehicles targeting rural populations focus more on trip-purpose, lifestyle, and mobility. Both the urban and rural division in vehicle interpretation is different in the dependency such as Kline and Pinch (1996) suggest. Those populating different distinct urban forms interpret the automobile and the dependency differently.

Consumers are interpreting their own dependency within their vehicle choice even if they are aware of this process. In some cases, the consumer/manufacturer communication about automobile dependency is increased for two vastly different reasons. There appears to be a consumer group that searches for the most automobile dependent use of a vehicle while another group searches to minimize their vehicular consequences. The heavy emphasis of automobile dependency themes within the alternative-fuel vehicle classification was surprising as the manufacturers appear to keep the automobile as a key artifact for a lifestyle that is conscious about their vehicular environmental footprint. On the other hand, SUVs in particular are trying to convince the consumer that it is the ultimate, all-in-one vehicle. In a odd fashion, the automobile dependency is, in fact, the highest and greatest purpose for the SUV in the brochures. The concepts identified by Lucas (2008) are all present within the SUV group and the SUV is often the most vocal about mobility, freedom, status, trip-purpose, and lifestyle. There is nothing that the SUV is not. While automobile dependence often holds a negative perception, the SUV is marketed as the most hyper-dependent vehicle as it is the vehicle you depend on. Because the SUV fulfils all of the needs of the automobile dependent lifestyle it is the highest and best vehicle. It is mobile in every condition; it takes everything from stuff, to friends, to pets. It is a mobile living room. The SUV does not conform to outside pressure, the world conforms to it.

While there might be a knob to change the traction control of the vehicle to adapt to difference surfaces, in reality, the SUV is making the conditions adapt to the consumer's driving desirers. Rather than road conditions limiting the trips and behavior, the SUV expands on mobility and capacity. Much like the social/environmental re-organization to automobile dependency, the SUV creates the same centric perception that the world meets the needs of the driver.

On the other hand, the alternative-fuel vehicle communicates that the vehicle itself can conform to the travel conscious consumer and offers a solution to potentially conflicting needs. The alternative-fuel vehicle even acts as a lifestyle/status marker for those seeking to meet certain environmental perceptions as lifestyle is very important theme in the brochures. More fuel efficient vehicles do promote lower vehicular transport cost and might encourage more vehicle use. Much like the criticism of CAFE standards by Kleit (2002) where they argue that increase fuel economy has increase vehicle use, the alternative-fuel vehicle might be the mechanism for the automobile to continue as fuel prices rise. However, the brochures are suggesting that there is a group of consumers, surprisingly suburban that are on some level cognizant about their travel demands and the consequences of those needs.

Other vehicles promote automobile dependency in a different manner. Status remains a significant theme for small passenger vehicles and large passenger vehicles. While both vehicles are at nearly opposite spectrums of the price-range for passenger vehicles, both vehicles are marketing luxury to different consumer groups. Large passenger vehicles are marketing status and luxury to economically established consumers with larger budgets. On the other hand, the small passenger vehicle is a status symbol for those with smaller budgets as owning a "new" vehicle is a statement over those in similar economic groups that purchase "used" vehicles. Large passenger vehicles had the least amount of total automobile dependence themes but half were

210

status oriented. Thus for the large passenger vehicle consumer, targeting the status argument is the best method for targeting automobile dependency.

Purchasing a small passenger vehicle marketed within a status/lifestyle similar to that of an alternative-fuel vehicle. The small passenger vehicle is either a lifestyle choice or a means in which to communicate a consumer's lifestyle with other motorists. The lifestyle argument is the most ambiguous of the automobile dependency themes, however it addresses the most important: the hyper-mobility lifestyle. Mobility was not a common theme for most vehicles. Only SUVs and pickup trucks feature mobility, and this theme was associated with four-wheel drive capability. However, marketing the hyper-mobile lifestyle is as fragmented as automobile dependency. With the small passenger vehicle, the brochures account for those which a fragmented perception. The Honda Civic is the prime example as there are six models addressing six potential lifestyles stemming from an environmentalist perspective, to the long commuter, and all the way to the motoring enthusiast. The vehicle is the means in which the consumer is able to keep up with a very fluid social structure. Addressing the lifestyle could perhaps be one of the better ways to address automobile dependency with consumer groups. If there is a way to deconstruct the needed for the hyper-mobility needs of the consumer then the lifestyle argument might be less of automobile dependency method of selling vehicles.

Vehicles seek to accommodate certain aspects of automobile dependency. Either it be a lifestyle, mobility, status or even trip purpose, vehicle types address different reasons why consumers rely on automobiles. In the end, it is the opposite spectrum of vehicle types that have the most poignant vehicle dependency marketing. The SUV and the alternative fuel vehicle are offering the same thing: a vehicle without sacrifice. It is interesting to approach both the alternative-fuel vehicle and the SUV as similar vehicle types, but both offer the same concept but

to radically different fragments of automobile dependent consumers. Other vehicles offer automobile dependency in different ways but not in the same way as alternative-fuel vehicles and SUVs. The difference is that while alternative-fuel vehicles are communicating to the consumer that they are an alternative to giving up the automobile, the SUV is the ultimate vehicle for those not seeking an alternative. If these vehicles were on the menu at a fast food restaurant, the alternative-fuel vehicle would be the secretly high calorie salad while the SUV would be the triple-patty thick-burger with extra bacon. One is there to keep the conscious consumer from completely abandoning the restaurant while the other is to maximize those seeking to indulge regardless of other issues.

The limitation with using the brochures as the only avenue of addressing automobile dependency is the point in which a consumer is within their transportation decision process. Once the consumer has a brochure, they are already far along within the decision process to purchase a vehicle. Other media might have had a greater impact thus making the brochure a link in the chain. While brochures are often an information source consulted after the decision to purchase a vehicle has been made, a brochure does reinforce the different traits of automobile dependency within the vehicle purchasing process. TV commercials, radio ads, print media, and social media might inform more about mass-marketed automobile dependency, the brochures offer a different perspective design to address a potential consumer directly. It is possible that once the consumer is online or in the dealership surveying the brochures that their commitment to the automobile has already been made.

Challenges for Urban Planners

The issue for planners when addressing automobile dependency is to address it not as a singular environmental challenge, but as something much more systemic that incorporates

social/cultural phenomenon and the social construction of how communities incorporate the vehicle within their activities. The observations of the vehicle brochures suggest that the manufacturers are marketing different aspect of automobile dependency within different vehicle types. This fragmentation of automobile dependence is not reflected within a planning prospective yet. Often planners address dependency as a singular phenomenon and thus attempts might be imperfect within a community. Rather a planner should identify a specific aspect of dependency that is of the chief concern such as mobility, freedom, or status and direct activities toward addressing that group of attributes identified within the planning literature. Lucas (2008) already suggests that when planning discusses automobile dependency, planners might be talking about several different phenomenon. Instead of attempting to normalize automobile dependency definitions, the concept is rather an agglomeration of factors. Automobile manufacturers are already targeting vehicles types for these different aspects of dependency and planning techniques should explore the relationship between a fragmented automobile dependencies.

Combating Automobile Dependency by Vehicle Type

One of the issues with addressing automobile dependency is that a large cohort of the population is generally unaware of the dependency, is apathetic about it, or does not see it as a problem. If the problem is that one must have a vehicle in order to operate within the confines of environmental form and society constructs, the solution is the vehicle. Incremental change to the environment might prove effective but a large amount of the American urban fabric is oriented to the automobile. When the system and the users of the system do not perceive a problem, creating large-scale change is difficult. However, if it is possible to change the way consumers approach and buy the automobile, then it might be possible to change how they use the vehicle. Often the same qualities in which we describe automobile dependence are also how we select vehicles.

213

Rather than searching for the vehicle that offers the most hyper-mobility, status, and lifestyle qualities, the automobile discourse can change to include other modes. The automobile is not a "bad" mode, but it is a mode that is relied upon to the point where is constrains alternatives. As a result, in the era of higher fuel prices, congestion, and climate change a single option of only the automobile might not the best option.

First of all, the automobile will likely remain in the American landscape. Americans are too invested in the automobile from supporting automobile manufacturing to providing public infrastructure of its use. Many communities, especially rural communities, are dependent on the automobile for their connection to the world, particularly where other modes lack the population demands to make it feasible. Thus, in a way, the automobile will always have some areas that will remain dependent to the single vehicle transport. As a result, dependency is not something that must be eliminated from all landscapes. For rural areas that are not able to support transit or other modes, the dependency should be managed so that the negative consequences do not place an undue burden for those who are dependent. In this case, there is a need to ensure that the vehicle fleet is as efficient and low-impact as possible. In more urbanized areas, dependence can be addressed with other mode options and adapted land-use. Finally, the automobile-oriented suburban areas need redress. The automobile-oriented suburban areas would benefit from a more immediate (short-term) adoption of low-impact vehicles until changes to urban form can be applied.

One of the possible methods of resolving automobile dependence is by addressing different automobile users. While it does not directly address/stop automobile dependency, if there is a way to change how the consumer approaches the vehicle, then there is a way to change the relationship between the consumer, the vehicle, and the environment. The brochures suggest

214

that the dependency is fragmented, similar to different consumer groups or target markets. Instead of addressing automobile dependency as a singular phenomenon, those seeking to address automobile dependence should consider how automobile manufacturers present the automobile market with different market segments, which include those of different urbanized or rural areas. There is no one type of automobile and thus there is no one type of automobile dependence. As a result, it might be easier to change the behavior of certain vehicle type adopters than others. In this case, an alternative-fuel or small passenger vehicle driver might be easier to address than that of an SUV driver because the decision making process and values that the alternative-fuel/small passenger vehicle driver is using is different from that of an SUV driver.

SUV brochures are marketing the automobile dependence in the extreme and those adopting the vehicle assume that the most extreme is the best option. Thus consumers adopting this vehicle type base their automobile use and purchase on the same qualities as those who are hyper-dependent on a vehicle. The SUV brochures are trying to out-sell other vehicles by marketing the same attributes expressed within automobile dependence. The SUV is the epitome of the automobile dependent culture whereby other vehicles are judged. It does not matter if the consumer does not need to cross rivers during any of their trips; just having that capability is a major factor. It is that idea of unrestricted movement whenever the consumer chooses to move that appeals to the SUV market segment. That is why the spontaneous road-trip is a major SUV theme. The SUV is one of the only vehicle types, along with crossovers, to feature freedom as a theme. If a consumer bases their concept around the attributes created and confined by those of an automobile dependent population, then other vehicle types cannot truly live up to the hyper-

mobility, high status, universal trip-purpose type of vehicle that is marketed as the SUV. The SUV is the king of the dependent motorist.

The alternative-fuel vehicle is attempting to maintain its place within a consumer mind-set that is aware of the consequences the vehicle. The alternative-fuel vehicle is struggling for survival against two weary market groups. On one hand, those who are conscious about their vehicle usage but remain resistant to changing their transportation lifestyles are seeking to minimize their guilt much in the same way a "low-fat" label minimizes the guilt of those with poor eating habits (Wansink and Chandon, 2006). Thus the alternative-fuel vehicle can be both "good" by reducing the impact of the cognizant motorist who are trapped between the automobile dependent social requirements while seeking an exit and "bad" by those who use the alternative-fuel label as a means to justify their automobile dependent behavior. The alternative-fuel vehicle can assist those who need a "sometimes-use" vehicle but then hinder those who wish to keep the automobile dependency but without the guilt. What needs to happen is to reduce the effects of the dependency without reducing guilt. The consumer needs positive feedback about reducing the impact of automobile use.

In essence, there needs to be an alternative automobile lifestyle that might include the vehicle for specific trips while also promoting other modes. Rather than focusing on the hybrid vehicles as a means of maintaining mobility during peak fuel-prices, focus on maintaining a hybrid-mode lifestyle. Because small passenger vehicles and alternative-fuel vehicles focus on the vehicle as a lifestyle choice, the same market segments that these vehicles appeal to can be the same target in slightly different aspects. Both vehicles are promoted within a more urbanized environment within the brochure, thus the consumer considering these vehicles might also be a consumer that resides in more urbanized areas with other modes available. In addition, the

216

vehicles are also commuter focused only representing amenities to the driver and excluding passenger seating, cargo, or family themes. Thus, the consumer group might be targeted towards using other modes for daily commuting while having the vehicle for other trips. It is important that the vehicle remains functional within the hybrid-mode lifestyle. The main key to this approach is that the new lifestyle avoids sacrifice. This is a key argument within the automobile brochures. The main concern for promoting a lifestyle shift is that the non-automobile dependent approach needs to address both the issue of status and the new vehicle type: the crossover. With status, the automobile differentiates between the transit dependent and the choice riders. There must be some appeal to status when making an automobile alternative argument because status is a major claim for both the small passenger vehicle, the large passenger vehicle, and even SUVs. For as long as the automobile can be a status symbol and market that status to consumers, changing the perception of not driving will be much more difficult.

The second issue is the crossover. The crossover vehicle is the modern attempt at selling a light-duty truck to urban and suburban consumers. While the crossover did not express a large number of automobile dependent themes, a vehicle type would go in the opposite direction of a more responsible dependency or an automobile alternative lifestyle. Much of the crossover takes the essence of an SUV with its hyper-mobility and capability and converts it into a smaller package. In some ways, it is the modern station-wagon. The problem is that it is training consumers, particularly urban oriented consumers, to model their habits as those of a SUV owner by focusing on ample capacity and mobility rather than how the vehicle relates to the dependency of a vehicle. With a classification as a light-duty truck, crossovers are the mechanism in which SUVs are maintaining their presence in an era of higher fuel prices. Whereas alternative-fuel vehicles are trying to maintain their use to those who are becoming

aware of the consequences of vehicle use, the crossover is an attempt to keep consumers within

the context that drives SUV sales.

The way a consumer approaches a vehicle and the material within a brochure has an

impact of how the American automobile is shaped for vehicle users. Automobile marketing does

not create dependency, but rather it helps define and reflect the parameters within the consumers'

lexicon. The brochures are one media type that provides the consumer information about the

appropriateness of the vehicle for different usages, but unlike some other information and media

sources, it is designed to influence the consumer during the purchasing process or closer to the

end purchase date. The brochures offer the window in which the manufacturers are instructing

the consumer about the proper use of a vehicle. The manufacturers are both leading the consumer

as well as trying to connect with consumers' preconceived notions of appropriate use.

Approaches for Urban Planners

As mentioned earlier with the discussion with urban form, incorporating the vehicle fleet

within the community report or comprehensive master plan is an important approach of

alleviating automobile dependency within a locality. Planners should survey the type of vehicle

citizens are adopting on the aggregate scale. The type of vehicles operating within certain land

use scales will dictate how painful increases in fuel spikes might be for both the public and the

economy. While not addressing the marketing of vehicle type, it does address the consequences

of how a community adopts vehicle types and applies the vehicles within a urban form. In

addition, tracking vehicle type adoption is also a means in which to base other anti-automobile

dependency policies such as transit, carpooling, and anti-sprawl measures. Localities with a

greater percentage of inefficient vehicles is at a greater risk during peak oil that those with more

efficient vehicles just as a sprawling transit-less community is at a greater risk than a community

with compact urban form and transit. This is a community attribute that is not discussed within the planning discussion that can have significant effects on the economic viability of a community. If a community is more automobile dependent, then vehicle fleet becomes more important. A community can develop a metric for determining its own self-diagnosed definition of automobile dependency such as identifying the distance from the home to work or basic services and then compare that with the vehicle fleet. At that point, the planner could then assess the additional cost per week or month that a resident would potentially spend on fuel if fuel prices rose by ten cents or two dollars. If the community report can determine that a specific zip-code travels to another zip-code for work or basic services and that zip-code has a higher rate inefficient vehicles, then that corridor might be a target for transit, ridesharing, or other remediation attempts in the event of a fuel-prices spike. Tracking the vulnerability of a community based on automobile dependence and vehicle type is another tool for a planner to take to elected officials for advocating or justifying measures that address automobile dependency for specific corridors.

Local planners might not be able to address vehicle-type adoption or fuel economy standards, but planners can address the consequences resulting from consumption and regulation within local plans. The type of vehicle the consumer consumers is important especially in an era of uncertain fuel costs have a direct impact on the economies of many jurisdictions. Furthermore, in an era of scarce governmental resources, allocating dependency reducing measures to targeted populations becomes much more important.

Vehicle Type and Fuel Economy Regulation

Current fuel economy standards are not simply inaccurate for modern vehicle adoption; they are utterly broken. It is not because of how we try to classify vehicles based on design

characteristics; rather it is how manufacturers and consumers have slowly changed how Americans purchases different vehicle types. At the beginning of CAFE regulations most vehicles were passenger vehicles, but over time there has been a switch to light-duty trucks and this has had significant consequences on the American resistance to higher fuel prices. The regulations have been focused on the physical characteristics of the vehicle for determining the use; however, this method is ignoring the consumer's interpretive flexibility of a product. Just because a product is primarily designed for one purpose does not mean that that purpose is adopted or kept by a consumer. Much in the same way a telephone has evolved overtime to include additional functions and features, so has the light-duty truck. Consumers can change the purpose, and marketing can facilitate that change through perception. Both crossovers and SUVs are no longer trucks; rather they are family transport vehicles that offer more versatility than the sedan.

Newer fuel economy agreements such as foot-print approach does not address how consumers adopt vehicles or manufacture target light-duty trucks for specific passenger purposes. The brochures do not differentiate between footprint or light-duty trucks. In most cases, they focus on how the consumer is seeking to use the vehicle. Historically, the CAFE regulation distinguished between passenger vehicles and light-duty trucks because there was a sharp difference in how the vehicles were adopted and used. With about 90/10 spit in 1978 that slowly reduced to a nearly equal division among passenger vehicles and light-duty trucks, there is no longer any separation between the two regulatory classifications with both vehicle types representing about 50 percent of the new vehicle market. From the marketing standpoint, there is no difference between crossovers and passenger vehicles; there is only a minimal difference

between passenger vehicles and SUVs. Only small and large pick-up trucks demonstrated a break from passenger related themes but both are inching closer to passenger use.

If the passenger vehicle to light-duty market share remains in a similar percentage as it did when the CAFE legislation were drafted, then the means in which manufacturers marketed their vehicles would be mute. However, that is not the case. The rise of the light-duty truck that includes SUVs, crossovers, and minivans has only hindered the need for American motorist to be resistant to sudden fuel price increases. The problem is not that these vehicles exist as there is a need for them by consumer groups, rather it is the saturation of these vehicle types that has resulted in and is demonstrated within vehicle marketing campaigns. According to the marketing brochures, the majority of light-duty trucks are not light-duty trucks, they are explicitly passenger vehicles. The light-duty truck no longer exists as it once did. Manufacturers are able to build and classify a vehicle as a light-duty truck in order to provide space, engine size, and mobility features that are prohibitive to the passenger vehicle due to the regulation and then sell the package to the consumers as an everyday passenger vehicle. It is similar to a drug company avoiding drug trials by classifying a product as a vitamin and then turning around and marketing it as a means to treat disease.

The marketing approach to how vehicles are sold to consumers is at great odds with how the vehicle is presented within the regulations. The effects of this approach by both consumers and manufacturers is that the United States is weaker at adapting to a fuel price spike; consumers have shifted expectations of what a passenger vehicle should be capable to do; and vehicles can be perceived as more appropriate for different usages. Passenger vehicles have been mostly relegated to focusing on a single passenger (the driver) commuting functions while the light-duty truck is the vehicle for transporting family/children, other passengers, recreational equipment,

and passenger items and for road-trips. The SUV/crossover is the modern station wagon; however, the station wagon was slowly removed from the market because it had to conform to passenger vehicle standards while the SUV, minivan, and crossover do not. Thus, the fuel economy regulation actually created a market advantage for less fuel-efficient vehicles that vastly altered the American automobile landscape. The vehicle brochures reflect this shift. In the consumer interpretation of vehicles, the light-duty truck is a viable alternative to be used as a passenger vehicle.

The SUV and the related SUV-esque vehicles such as crossovers is the universal vehicle that is all things to all consumers. The crossover is the more passenger-oriented SUV without having to sacrifice to the point of an actual passenger vehicle. Crossovers and SUVs market features such maximum capacity, but the mechanism in which it can offer this capacity is the lower fuel economy standards.

The revised footprinting approach to fuel economy standards only entrenches the light-duty trucks further within the consumer market. The light-duty trucks are provided the advantage and this affects how consumers relate and identify with vehicles. When a vehicle is marketed in the maximum/extreme scope of automobile dependence, it defines how the consumer approaches trip demands. Fuel economy, which seeks to limit the effects of automobile dependence on foreign oils, is actually providing a market advantage for less fuel-efficient vehicles and is redefining how Americans approach transportation. However, there is one vehicle type that is also redefining how Americans move in a brand new way: the modern pickup truck.

One potential concern is the extended or full cab pick-up truck. While pickup trucks are still focused on the light-duty truck aspects of the regulation, the increase truck-cab size is slowly changing how a pickup truck is both consumed and driven. While it was not mentioned within

the brochures, some truck TV commercials have featured passenger use. For example, a Chevrolet truck commercial features father and son motifs and one go so far as to show that the truck is used for taking small children to daycare. The full cabin pickup truck with seating for five or six could be the next transition for passenger vehicles in the upcoming decades. This would have serious ramifications on how fuel economy and automobile dependency are addressed within the consumer mindset. Thus keeping the distinction between light-duty truck and passenger vehicles might be a constantly flawed approach.

The Vehicular Solution

When it comes to addressing automobile dependence, fuel economy is not a solution for the issue, rather it treats the symptoms. Specifically, it treats the symptoms that manifest from the economic burden of a fuel-source. However, addressing how vehicles are classified within the fuel economy regulations also changes how consumers interact with their vehicles. Currently different vehicle types are marketed towards different aspects of automobile dependency with the more inefficient vehicles often marketing the most aspects of automobile dependency. This ultimately stems from the regulations, providing a market advantage for the light-duty truck and vehicle marketing promoting the light-duty truck within a passenger vehicle context. As a result removing the market advantage from light-duty trucks and addressing all consumer oriented vehicles as potential passenger vehicles would address those vehicles that are skirting fuel economy regulations and change the marketing of the most automobile dependent lifestyle. Rather that incentivizing the most automobile oriented vehicles, the regulations would seek to change how consumers approach their vehicles.

Changing how the fuel economy regulates the consumer vehicle fleet can have other lasting effect including how vehicles interact with land use and automobile dependency. The

transition to using light-duty trucks has changed how Americans move and approach their own dependency. Rather than adopting vehicle types that minimize the economical effects of dependency, Americans have expanded their vehicular dependency. Not only is a vehicle needed, but also the most capable vehicle in any situation is needed. Not having enough of any vehicle attribute is something that is a problem for the American consumer, at least when approaching the universal vehicle: the SUV. Fuel economy regulations unknowingly change the nature of the American automobile fleet and in doing so played into the system of an automobile dependent culture that prizes hyper-mobility and capability. It created the SUV.

The brochure analysis shows that the gap between passenger vehicles and light-duty trucks is very small. Only pickup trucks are significantly different. Crossovers are explicitly passenger vehicles and SUVs are passenger vehicles with additional abilities. Small pick-up trucks are recreational vehicles and large trucks are work vehicles with an ever-increasing hybridization to carrying work-crews and families. The brochures affirm that the division between what is a light-duty truck and a passenger vehicle is minimal at best. Fuel economy regulations are therefore inaccurate to how the consumer items are being sold, creating a vastly different consumer approach to vehicle purchasing.

Not only that, but there is a strong division within the brochures over which vehicles belong in which urban environments. Thus vehicles with the market advantage of lower fuel economy standards are also targeting populations in which are the most automobile dependent. The two-tier division of vehicle type is creating the exact opposite effect in which it intended. Current fuel economy regulation within the context of how vehicles are being presented to the consumer has made automobile-dependent populations less resistant to fuel spikes than their

urban counterparts. Then the solution is not to address vehicles by their physical characteristics, but by their marketing approach.

The first stage is to remove the passenger vehicle and light-duty truck division from the fuel economy regulation. In doing this, the regulations will account for the existence of all vehicles. Currently, NHTSA tracks the combined fuel economy of both vehicle classifications so the combined light-duty consumer vehicle fleet is a known entity and not that difficult to address. In addition, the EPA currently addresses most consumer oriented vehicles such as trucks, mini-vans, passenger cars as light-duty vehicles (EPA & NHTSA, 2020, pg. 25396). Currently, the combined standard is 29.6 miles per gallon (33.8 for passenger vehicles and 24.5 for light-duty trucks) but this shifts most of the burden to passenger vehicles (NHTSA, 2012). For example a would-be station wagon would have to conform to the 30.1 MPG standard but a crossover would only be required to meet the 24.2 standard (NHTSA, 2012). Both are being marketed for passenger use but the regulations are different. Removing this distinction would account for passenger vehicles to be more competitive for the market share. In some cases, there might be a drop in former passenger vehicle fuel economy as new vehicle types , but as long as the standards reflect an increase in overall fuel economy, the consumer vehicle fleet should improve with the vehicle change.

The other effect would be that the automobile dependency aspects used to sell light-duty trucks might disappear. Much of the ability to sell the less fuel-efficient SUV was because it was outside the fuel-economy restrictions and thus the off-road features were then used to exploit the hyper-mobility and utility aspects of automobile dependency. Off-road four-wheel drive vehicles existed before fuel economy regulations but they were not the family road-trip haulers seen in modern advertisements. When a vehicle can market aspects often holding positive connotations,

then it holds an advantage over other vehicles. The SUV will continue to exist within a single-tier consumer fuel economy system, but it will no longer hold an advantage over passenger vehicles with similar cargo and passenger space. However, the category of pickup trucks still needs to be addressed.

The demand for a pickup truck is without question for many forms of productivity. Pickup trucks are work vehicles designed for very specific purposes. However, the expansion of the pickup truck as a potential substitution for a passenger vehicle is a concern for fuel economy regulations. On one hand, there is a need to keep these vehicles attainable and viable for economic reasons while on the other hand, the 5-6 passenger pick-up truck with a short bed could be the future "SUV." As a result, light-duty pick-up trucks should be included in the consumer vehicle regulations as they are being sold to general consumers as well as businesses and farms. Thus the overall fuel economy standard should reflect the mixed fleet of passenger oriented vehicles (including crossovers and SUVs) with light-duty pickup trucks. Currently medium duty and heavy-duty pickup trucks are outside current CAFE light-duty vehicle classification so there is little threat to those vehicles with unnecessary fuel economy regulation. In addition, the sales volumes are not on the same level as light-duty trucks. Perhaps, light-duty pickup trucks should focus on developing better diesel technology since trucks are focused on torque more than passenger vehicles and diesels offer better fuel economy and towing ability.

The next approach to addressing fuel economy is to address fuel economy and vehicle type within the most automobile dependent populations, especially rural areas. Currently, we are marketing the least efficient vehicles to rural populations. Most of the more fuel-efficient vehicles are not visibly present as part of the rural landscape. Furthermore, the qualities of the fuel-efficient vehicles are not those that have been traditionally accepted by rural populations.

226

Marketing to a rural population includes having rural settings within the brochure, featuring the adaptability/versatility of a vehicle, and inserting it into the context and values of a rural population. First, the fuel-efficient vehicle must be seen and valued as a tool beyond simple commuting or luxury transport. The fuel-efficient vehicles can make an argument that unnecessarily waste is not an rural value (urban is wasteful and rural is not) and that it preserves the rural self-perception of being independent and rugged. Thus, hybrid and battery technologies must also feature some adaptation as a mobile power-source and justify their existence beyond basic commuting and fuel economy. The fuel-efficient vehicle does not have to be rural; it has to appear rural and society will interpret the use. However, for as long as fuel-efficient vehicles are marketed within an urban context specifically for those who commute or are seeking luxury comforts, they will be distrusted by the rural consumer.

Finally, a shift needs to occur within the vehicle marketing to put less focus on maximum capacity. This is in part to the SUV being marketed towards passenger use and the means in which the SUV adoption was distinguishable from passenger vehicles. When the vehicle is marketed for every-use, it can become a every-use vehicle for the consumer. At the same time, the manufacturers are marketing different aspects of automobile dependency to the consumer through different vehicle types. As a result, methods to address automobile dependency from a social/cultural standpoint must focus on addressing a fragmented perception of why the automobile is demanded for such a high volume of trips. Planning has sought to lump automobile dependency into one phenomenon that can solve the dependency through one approach. Rather, the manufacturers realize, intentionally or not, that consumers are fragmented in the reasons to adopt a vehicles and they adapt accordingly. Targeting consumers of specific vehicles who are already cognizant of the effects of automobile use is one way, but also

227

accepting that if an automobile dependent population adopts less detrimental vehicles, it is a short-term win until the environment and the socio/cultural lifestyle can make more choices for the consumer. For as long as a population thinks that it needs the capacity of a large capacity vehicle when most trips do not use this capacity, there is a problem. Brochures put a heavy emphasis on lifestyle and perhaps this could an avenue to addressing the automobile dependence for populations that might have a choice. If an automobile-alternative mode can offer a different lifestyle that both dismisses the automobile and provides a better alternative, the automobile lifestyle is addressable.

Chapter 7: Conclusion

Synopsis

Main Points

- Current fuel economy regulations do not address a shift in the vehicle fleet.

- As a result, manufacturers have an advantage or loophole where they are able to market light-duty trucks to consumers as passenger vehicles, ultimately creating the ultimate advantage for the SUV.

- An analysis of the images also shows that not only are these less fuel efficient vehicles marketed for specific uses, they are targeted to specific environments, so rural and even suburban populations remain the most automobile dependent.

Implications for Planners

- Planners must adjust their approach to addressing automobile dependence to include an analysis of how communities adopt vehicle types as a means to resist fuel spikes.

- Based on this analysis, planners can benefit from an expanded concept of automobile dependence. It is a fragmented rather than monolithic and depends on the consumer situation.

- Planners should consider the automobile in context by connecting it to its perceived use, actual use, and finally land use, for a more comprehensive picture.

Implications for Transportation Professionals

- Transportation professionals should understand how marketing factors into the distortion of CAFE standards.

- Furthermore, they can better understand how the regulation is communicated and can be communicated both to manufacturers and consumers.

- Finally, professionals should consider the impact if the current marketing patterns continue. Currently, automobile manufacturers market vehicles in different urban settings with the least efficient targeting the most automobile dependent.

Implications for Researchers
- Researchers can continue these types of studies in content analysis and critical discourse analysis to assess the effectiveness of the regulation in more ways that gas mileage percentage increases.

- Understanding the visual grammar and overall design of marketing materials provides an additional avenue for discussing automobility, both through perceived use and impact consumers and their environments.

- Over a period of time, research can reveal how discourse evolves and furthermore, how the planners, policymakers, manufacturers, and consumers socially construct their automobility.

Conclusion

Within the automobile dependent society, the dependent are a vulnerable population and the current fuel economy regulations are not addressing the shift in the vehicle fleet. The market advantage for manufacturers that are able to sell light-duty trucks to consumers as passenger vehicles has changed the complexity of dependency. Fuel economy regulations have created the ultimate automobile dependent vehicle: the SUV. Furthermore, the current revised approach only cements the light-duty truck as a viable passenger vehicle option by having lower standards for vehicles labeled as trucks.

The problem with this loophole is that manufacturers can market light-duty trucks as passenger vehicles without qualm or hesitation. The vehicles are not only marketed as passenger vehicles, but they also target rural and even suburban populations that are the most automobile dependent. As a result, planners must adjust their approach to addressing automobile dependence and include an analysis of how communities adopt vehicle types as a means to resist fuel spikes. As manufacturers give meaning to the vehicles they present within the brochures, passenger vehicles become commuter cars of comfort and smooth rides while the light-duty truck is a multi-use tool that is perfect for families. This marketing approach has significant implications for each community that struggles with automobile dependency.

As transportation professionals become aware of how marketing can distort the CAFE regulations, they can do more to study and understand how this distortion is supported by the regulation. Furthermore, planners and policymakers should be aware of how the standards and manufacturers support consumer adoption of light-duty trucks as a passenger-oriented vehicle. Many light-duty trucks (crossovers, SUVs, and four-door pick-up trucks) are the new family

vehicle. The marketing materials make this category more apparent and the regulation should be reconsidered.

Furthermore, in revealing this aspect of vehicle marketing, this study gives planners the discourse to discuss CAFE standards in use rather than on paper. It also expands the concept of automobility. As this study shows, automobile dependency is not a monolithic phenomenon but rather fragmented aggregate of several consumer perspectives. Automobile manufacturers suggest different dependency motifs through different vehicle types. Planners, likewise, should consider automobility in context. In connecting the automobile with perceived use, actual use, and land use, planners can gain a better understanding of how the automobile needs to be regulated in the future, and more importantly, how this regulation can be communicated, both to manufacturers and to the consumers. Currently, automobile manufacturers market vehicles in different urban settings with the least efficient vehicles while targeting the most automobile dependent.   Should this pattern continue, then as fuel prices increase, these areas will have the most severe economic consequences.

This kinds of research, based in content analysis and critical discourse analysis, should be continued, particularly as a mechanism for assessing the effectiveness of the regulation. Planners need to understand not only what the regulation states, but how it impacts transportation. In this case, the effects become visible, literally, in the images. Understanding this visual grammar, as Kress and van Leeuwen call it, and the overall design of the marketing materials will be important to factor into any analysis of automobile use, from the local level to the national level. Over a period of time, research can reveal how discourse evolves and furthermore, how the planners, policymakers, manufacturers, and consumers socially construct their automobility.

A Nissan flyer received after the data collection sums it up best. They ask, "what kind of driver are you" and present four options. Option number one is the "road savvy, master commuter" and the vehicles displayed are those classified as passenger vehicles and a few crossovers. Option two is the "pack leader: safely transport your cubs in style" and they display only light-duty trucks. Option three is the "adventurer" option where the "world is your road" with the pick-up trucks and SUV prominently displayed show drivers engaged in various activities from crossing sand dunes to transporting mountain bikes. Finally, there is the "superdriver" where Nissan displays its sports car models. This brochure sums up the entire research study. Vehicle brochures address consumers in segmented groups and appeal to different automobilities within the automobile dependent framework.

In addition, light-duty trucks models are explicitly passenger vehicles and they are changing how people interact with their vehicle. If a consumer feels that they need over 80 cubic feet of cargo space, must transport up to seven or eight people, or escape at any moment in any environment, what argument could any anti-automobile dependency make to reduce this consumer perception? Suddenly, automobile dependency is not only having a car but also having the specific car for every possible purpose and the vehicle that matches your space. The manufacturer-consumer dialogue within the brochures is directing specific vehicles for specific purposes and environments.

Manufacturers are marketing light-duty trucks to consumers as passenger vehicles while steering consumer perceptions about when vehicles belong in different environments. Manufacturers (and likely other sources) have socially constructed which vehicles are appropriate for different urban forms and which vehicle types are the preferred family haulers. At the same time, there is no rural passenger vehicle marketed to rural consumers based on

attributes on which rural populations have traditionally based their vehicle adoption patterns. There is a lack of fuel efficient rural vehicles and rural populations are the most inelastic population when fuel price rise. There is no other option but a vehicle, and unfortunately the types of vehicle targeting those consumers are the least efficient.

Automobile dependency needs to be addressed from multiple areas including changing environment/urban form, social/temporal constructs, and especially how transportation is marketed to the consumer. If the American population is to be automobile dependent for the next 20 to 50 years, then there is a drastic need to reduce the consequences of this dependency. We do not need to maximize the perceived advantages of hyper-mobility within large vehicles that are skirting regulations to be consumed on mass by populations that have little option about the use of the private vehicle to maintain their current quality of life. There is the ability to change the approach to automobility and automobile dependence by changing how the consumer relates to the product. If there is a shift in how consumers purchase vehicles and the attributes/factors that drive their decision, then there can be a shift of how they use their vehicle as well. Rather than focusing on capacity, they can focus on efficiency. Rather than having a roaming lifestyle, they have one that is connected into a civic community.

As Americans, we must socially reconstruct the automobile in a similar manner that Americans are trying to reconstruct their relationship with food. As humans, we cannot stop moving anymore than we can stop eating. However, we know that excessive calories and the lack of exercise are detrimental to our health. Over-reliance on the private vehicle, especially inefficient ones combined with improper land use or a lack of mode options, is detrimental to the community and the environment. As motorists, we need both a better diet and a better exercise plan.

234

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Appendix

Coding Instructions

Thanks for the help coding. It is an intensive process but it will provide rewarding result. It might be slow at first but once you become comfortable with the categories it should become much quicker. It will be tough to do this all at one sitting and I truly recommend looking at the brochures with fresh rested eyes so take as many breaks as needed. Estimated time should take about a week of work. Unlike the previous coding attempts, the brochures are not provided (due to their size and restrictions in transferring). Instead you will have to go to the manufacturer's website and view/download them. Each manufacturer has a brochure available for each model listed. If there are any problems, please let me know.

The coding process is slightly different and will not be initially coded in excel since I am doing the coder reliability page by page. As a result, I need your codes in a word/note format. You get to go page by page and enter the codes that apply. The instructions also include the template to enter the codes. If it seems long, I get to do it as well and I am the one who gets to enter this into excel

Images Criteria
Image Environment
- Interior
- Partial
- Exterior (if exterior then denote if it is non-descript, fantasy, or real):
  - Non-descript
  - Fantasy
  - Real (if real then record both land use and surface types)
    - Land use
      - Urban
      - Suburban
      - Rural
      - Wilderness
    - Surface
      - On-road
      - Pavement
      - Off-road not in use
      - Off-road in use

Text
CAFE Textual Themes
- Interior Comforts/Luxury Items
- Seating Capacity
- Family Units
- Ride-quality (not off-road related)
- Transport of passengers and passenger related items
- Off-road capacity
- Cargo capacity
- Towing
- Non-passenger oriented amenities
- Utility, work, or productivity features

Automobility Themes
- Mobility
- Freedom
- Status
- Trip requirements
- Location
- Lifestyle

Image/Text Description and Explanation:
Interior :Interior of the vehicle where the main focus of the image is featuring the cabin design and amenities

Partial: Any image that is only showing part of the vehicle and not relaying any information about the setting such as a wheel, a cut-away of crash/roll cage, headlight or similar feature

Exterior: The image is focused on the exterior of the vehicle while also placing it within the context of an environment

If Exterior, denote environment
Non-descript: The environment of the vehicle is difficult or intentionally vague for the reader. Includes white or single colored backgrounds, backgrounds that are blurred or altered in a way that makes the environment impossible to distinguish or when the vehicle is cut out of an background.

Fantasy: backgrounds or backdrops that include significant and obvious alterations to the backdrop and include computer generated forms and images such as cartoon characters or landscapes. The environment where there has been deliberate alteration by the producer to make the environment completely unrealistic or absurd to the reader.

Real: An environment that has the likelihood of being realistic. Can include photoshopping vehicles in extreme earthly locations

If real denote land use:
Urban: Vehicles are surrounded by large buildings or high-density buildings close to the roadway. Images have little vegetation other than trees and shrubs that are a part of a streetscape and are intentionally placed. Vehicle might also be surrounded by large amounts of man-made material such as glass or concrete. If there is a city skyline, it is close to the vehicle and not in the distance. Also includes images of vehicles inside a building such as a warehouse, factory, or lobby.

Suburban: Vehicle is surrounded by a mix of landscaped vegetation and buildings. Buildings are, shorter and the roofline is often easily seen, lower density, and has setbacks from the roadway. Often has a strong association with suburban housing/commercial space and vehicles are placed in driveways or parking lots. Also includes landscapes with a city skyline clearly visible.

Rural: Backgrounds with agricultural development or undeveloped environments with a paved road present.

Wilderness: Undeveloped natural environments without a paved surface present or other human activity.

If real denote Surface
On-road: Vehicle is clearly on a roadway
Pavement: Vehicle is on a paved surface but it is unclear whether or not the surface is a road. Includes parking lots, parking spaces, and driveways.
Off-road not in use: Vehicle is stationary in an off-road environment. It is not displaying off-road capability or in use. Basically, it is a vehicle parked off road without any human interaction.
Off-road in use. Vehicle is clearly off-road and in use (be driven) or being loaded while stationary. Indicators of use include tire/wheel spin, mud/dirt flying, person load a pick-up truck.

Text
CAFE Textual Themes
Passenger Vehicle Themes
•Interior Comforts/Luxury Items: The use of words like comfort, luxury, refinement relating to the description of the cabin space or vehicle amenities
•Seating Capacity: Mention of seating capacity of more than 3 individuals
•Family Units: use of the words or descriptions of mother, father, children, family, relatives, love-ones
•Ride-quality (not off-road related): reference to how the vehicle handles without reference to off-road capacity.
•Transport of passengers and passenger related items: excludes family units but is referencing the driver, friends, coworkers and the ability to carry non production items such as groceries, sports equipment (such as hockey gear and kayaks), and leisure activities items.

Light-duty Truck Themes
•Off-road capacity Directly mentions off-road capacity
•Cargo capacity: Directly mentions ability to carry specific items associated with a work purpose (2x4, pipes, tools, work gear)
•Towing: ability to tow
•Non-passenger oriented amenities: Features not associated with passenger comfort or use
•Utility, work, or productivity features: Items that increase productivity in the workplace

Automobility Themes
•Mobility: Use of the word or concept that movement is instantaneous for example "goes anywhere, do anything"
•Freedom: explicit mention of freedom, escape, liberty, or self-reliance
•Status: How a vehicle relates to the social status of a user
•Trip requirements: Mention of how a vehicle makes a specific trip available or easier
•Location: Mention of a specific place or type of place, such as urban, wilderness, outdoors, coffee cafe
•Lifestyle: Mention of how the vehicle fits into a potential user lifestyle or the vehicle is a lifestyle choice

Vehicles Use more CURRENT model available either 2011 or 2012.
Chevrolet: Colorado, Silverado, Tahoe, Equinox, Cruze, Malibu, Impala, Volt
Cadillac: Escalade, SRX, CTS, DTS
Ford: Ranger, F 150, Explorer, Edge, Focus, Fusion,Taurus
Lincoln: Navigator, MKT, MKZ, MKS
Dodge: Dakota, Ram, Durango, Journey, Caliber, Avenger, Charger
Chrysler: 200, 300
Toyota: Tacoma, Tundra, Highlander, Venza, Corolla, Camry, Avalon, Prius
Lexus: GX, RX, IS, LS, CT H
Honda:Ridgeline, Pilot, Crosstour, Civic, Accord, Insight
Acura: RDX, ZDX, TSX, RL
Nissan: Frontier, Titan, Pathfinder, Rogue, Sentra, Altima, Maxima, Leaf
Infinity: QX,   EX, G, M
Kia: Sorento, Forte, Optima
Hyundai: Tucson, Elantra, Sonata, Genesis

Reminder: The coding process is slightly different and will not be initially coded in excel since I am doing the coder reliability page by page. As a result, I need your codes in a word/note format. You get to go page by page and enter the codes that apply.

ExampleBrand
ExampleMake:
pg.1Image: Exterior, Real, Urban, On-road
pg.2 Image: Interior, Image: Exterior: Non-descript, Text: interior, family units trip purpose
pg.3 Image: Exterior, Real, wilderness, off-road not in use, Text: Transport of passengers, lifestyle