I am exploring the tip of the iceberg on an entire industry of automotive design. My goal is to create a model sports car that has sex appeal and the ability to function beautifully on a track and on the road if it were made at full scale.

The name of the car's make is "D L V S" my initials, and the model name is "Lorem," which translates to "sexy" from Latin. Latin is the appropriate language to use for this title because it is a language that I have studied for years and it is the origin of many English words. Many English words are seemingly homage to their Latin roots, and similarly, this project acts as homage to sports cars throughout the history of car design. My interest in the function, design, and sex appeal of sports cars roots in an inexplicable love for the speed, agility, and beauty of sports cars. I spent years searching for my first car and my view of what was cool changed greatly. I am privileged to have received a budget that allowed me to look at many options, but I still had many criteria to fit. This criteria and budget did limit me, and force me to look to optimize many characteristics. Because of this, I learned that character comes with compromise, because in order for a car to fit certain criteria it will compromise other criteria by nature. For example, a sports car will never always comprise the ability to carry many people or drive through snow. I am interested in optimization of criteria as it pertains to sports cars, and I want to build a car with a personality. Ever since my own car search, I have been drawn to the notion that all cars have a personality, and often times the attractive personalities compromise logical components in a car. Due to my constant desire to make my own car sexier, I have gained an extensive knowledge of cars and car modifications. For the same reason, I am always looking at other sports cars and learning about car culture. What characteristics and compromises give a car sex appeal and the function of a true sports car?

The Lorem is based off of historical and traditional views on what makes a true sports car. American sports car culture has historically idolized cars such as the Corvette, Mustang, MG, Porsche 911, and Shelby Cobra. These cars are known for being small, fast, light, and impractical. These cars have laid the groundwork for years of iconic sports cars to follow. Many of these cars still exist in modern versions that are even more advanced. Corvette Stingrays now have brought back their name and some styling features that were born in the early 70s. The Ford Mustang also has evolved and partnered with Shelby to create the fastest Mustang ever. The Porsche 911 has been around ever since its initial creation and has seen many minor and major changes and variations that continue to make it one of America's favorite sports cars.

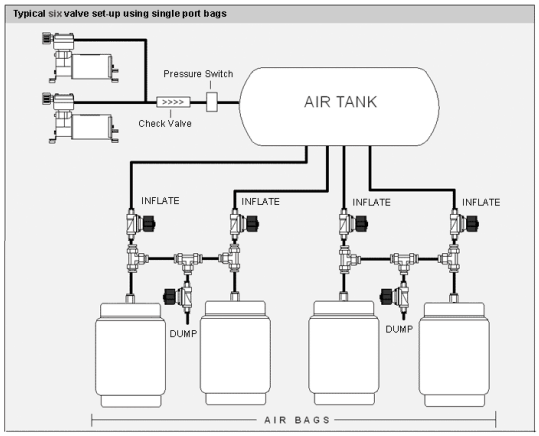
America as a whole may value these cars the most, however there are many cultures within America that have different perspectives on what makes a good sports car. There are entire cultures built around muscle cars, JDM, KDM, import cars, donks, lowriders, drag cars, rally cars, street racing, hot rods, and rat rods. Muscle car culture is about "speed and power," and tends to attract middle-aged American men, who like the masculinity of naturally aspirated engines and classic styling. However, muscle cars are far better for fast 0-60 times than handling (Auto Editors of Consumer Guide, How). JDM, which stands for Japanese domestic market, attracts Japanese-American and white teenage boys and young adults who like modified cars that are fast, less expensive, and fun to handle. JDM culture has one of the largest followings of any car culture that exists in America, besides muscle car culture. The culture is motivated by using turbochargers and engine modifications to build drifting cars that will attract the opposite sex. Most JDM cars have a wide stance and are low to the ground in order to achieve handling that is fit for drifting. KDM is extremely similar in culture and the style of the cars, except that the "K" stands for Korean instead of Japanese. Subsequently, the cars are Korean and the following is stronger among Korean-American and white young adults (Baxter, KDM). The title "imported cars" encompasses any car that is imported to America from other countries, including JDM and KDM cars. The culture is broader, and more competitive than JDM and KDM, but the cars are similarly made to be good at handling and often have turbocharged engines. Imported cars are often street raced, drag raced, and made into rally cars as a way to get a thrill from the speed and risk of racing. Racing cars has been a part of American culture since the creation of sports cars. However, street racing became popularized by movies such as *The Fast and the Furious*. Street racing is illegal, adding to the risk and the thrill, which is why it is more popular among teenagers. Drag races and rally races care legal forms of racing that are more skillful in how the cars are built and how they are driven (Mario, Street). Rat rods and hot rods are old cars that have loud American engines. This culture is predominant among middle-aged or older men who

often have a rusting car in their backyard that could be brought back to life with enough time and money. There are many similarities to the muscle car culture, even though rat rods tend to look fairly different from muscle cars (Hurlin, Rat). Lowriding is car culture popular in the Hispanic community across America, in which old American cars are modified with hydraulic suspension and small, bouncy wheels. The purpose of this is both the ability to show off the extremely low ride height of the cars and also the cars ability to make the front end bounce in the air. The cars may seem like a silly waste of money, but they are seen as a chance to discuss much more than just cars for the Hispanic community (Patton, Lowriding). Lastly, donks and slabs are popular among the African-American community. The main defining factor of a donk or a slab is a car with ridiculously big rims, but they are often American cars featuring candy paint jobs, costly video and stereo systems, and vertical doors.

Sports cars are by definition, built to be low to the ground, and high power, which creates a feeling of strong connection to the road. Some of the appeal that comes with the impracticality of a sports car is that it shows that the owner is of high status and can afford not to do grunt work. Instead, the impracticality, smallness, and agility create an intimate experience between the car and the driver, as well as between the driver and passengers (Newsday, Evolution). My uncle bought a two-seat Pontiac Fiero and claimed that it was not impractical because anytime three or more people were going somewhere; one of his friends would always have a larger car. From that perspective, a sports car is seemingly more practical, because you can hitch a ride with a friend and have an excuse to not be paying for gas. I agree with my uncle that if you are driving it should be a truly exciting experience; otherwise you shouldn't be driving at all. I believe that carmakers such as Tesla and Mercedes are not true sports cars because they are building cars that have autopilot functions, even though they are fast (Tesla Motors, Tesla). The ability to push a button and allow the car to make decisions for you while you check your texts is terrible thought. This would be beyond a distraction and less of a luxury, because the luxury of a sports car is the driving experience, and the driving experience is about quick decisions. A true sports car forces an engaging driving experience upon the driver and definitely does not allow you to take a break at the push of a button.

The science behind a sports car is one of the most important aspects of designing a sports car, yet one of the least considered aspects. The science behind a sports car is what propels the car forward and what allows it to dynamically handle corners. It is even present in the sound that the exhaust pipes make. A car with a high amount of horsepower may be able to go fast, but horsepower is not the only aspect that is needed to build a sports car. The more horsepower per pounds that the cars weighs, the better. However, engine efficiency and aerodynamic efficiency are both extremely important. It is ideal to gain maximum flow of cold air to the engine to increase horsepower, which can be achieved through turbochargers, superchargers, large air filters, cold air intakes, watercooling, and natural air-cooling. Some methods are more effective

than others, but all are helpful to the overall efficiency of the engine and fuel consumption, and many of the methods can be used together on the same engine. Below is an example of how aerodynamics is used to direct cold air into the engine and exit as efficiently as possible.



Maximizing airflow is extremely important to the aerodynamics of a sports car. In order to achieve this, sports cars are often low to the ground and are only as big as they need to be to transport an engine and the driver on four wheels. Airbag suspension is an ideal way to optimize both the aerodynamics and the practical drivability of a car. This type of suspension is made of literal bags of air that be filled or emptied with the flip of a switch. This way, when the bags lose air the car gets lower, increasing down force, grip, and aerodynamics. Also, if the car needs to get over speed bumps or potholes, the car can lift up and easily ride over it. A rear wing, or spoiler is another effective way to gain down force, which can help a car handle even if it is light. The science is behind a sports car even comes down to the exhaust pipes, the loudness of sports cars comes from a shorter muffler and wider exhaust pipe. The same aspects that make exhaust loud, are also what make the exhaust more efficient. The easier it is for the exhaust to leave the engine, the colder and more efficient the engine will be. As previously stated, airflow is key to the engine efficiency and gaining horsepower, and good exhaust is crucial to keep air moving (HowStuffWorks). Because sports cars have so many scientific requirements, the designer's creativity is greatly narrowed to what functions the best, however the art of comes in creating a car that balances function and sex appeal. As Leonardo Da Vinci once said, "Art and science are disciplines that must walk together, hand in hand" (Sarhangpour ,Pagani).

Artistically, sports cars are designed to look sexy, futuristic, and inspired by the beauty and muscle of animals and humans. Most American sports cars are muscle cars that are inspired by the strength and power associated with a male body, but they often take on characteristics of the people or animals that they take inspiration from. Therefore, muscle cars are often very powerful, but lack in handling and aerodynamics. Imported sports cars, on the other hand, are more often inspired by female bodies, taking on beautiful shapes with efficiency and elegance.

Above is an example of a car inspired by a female body

Either way, car designs always start with some sort of inspiration, followed by a large series of sketches and renderings that show the car from many angles. Often times these sketches will evolve as the designer draws out the car and sees flaws. Then the car will be modeled at a small scale, and eventually at full scale in clay. These clay models are used to determine the aerodynamics and test the beauty of the car. The interior is designed for complete ergonomic

comfort, while keeping in mind the type of person who would buy the car, as well as the lines of the exterior. A car's design goes hand in hand with its personality, similar to the way that a person's personality can often be at least somewhat determined by the way they look or what they are wearing (TheArtCareerProject, Get).

I believe that a sports car's personality is determined by the way that it compromises practicality for entertainment. Each culture has it's own way of making that compromise, and that is why culture and personality are so strongly linked in sports car communities. Sports cars are built to one up all cars of the past and compete with sports cars of the future. They are built to rock you back in to your seat and let out a reassuring scream of confidence the moment you hit the gas. They're so exciting that they make the owner forget about the cost to the environment, and their wallet. They should be attractive and intimate to look at, but should not reveal too much until you get to drive it. A true sports car is designed to fit a specific culture and attract drivers with an exciting tension between the vehicle and the driver, as well as flaunt its abilities with confidence.

Sports cars are defined by factors both measurable and immeasurable. Therefore, the definition is not strict, but rather open to varying interpretations and opinions. Writer, Ema Peters states, "Sports cars are symbols of adventurous lifestyle, wealth, and youthfulness" in "What Makes One Vehicle a True Sports Car" (Peters, What). This is true for the majority of sports cars, yet there is still a significant percentage of sports cars that are not expensive and therefore are not symbols of wealth. However, a cheaper sports car still could be seen as a symbol of wealth to someone who does not know the price. I also do not completely agree with the statement that sports cars are a symbol of youthfulness, because I cannot fully grasp that notion. I do not know what it is like to be old, so I have nothing to compare to, and I am not sure what about sports cars is youthful. An adventurous lifestyle could be seen as a youthful thing, but adventure is something that should be enjoyed throughout any person's entire life. I agree that sports cars represent an adventurous lifestyle due to the fun and excitement that they require just to keep you moving. Between gear changes and touchy pedals, the driver of a true sports car must always be attentive in a thrilling way. Caroline Carter, a writer and sports reporter wrote about sports cars in "What Makes a Car a Sports Car?" that, "These cars are packed with fun as opposed to practicality. However, a common misconception […] is that all sports cars are high-powered and cost a fortune" (Carter, What). This statement is far more similar to my own beliefs than Peters' statement. I feel strongly that a sports car truly has to compromise practicality for fun, and not all sports cars cost a fortune. However, I do think that all sports cars should be high-powered in some way. Whether that is in comparison to its weight, or in modification capability, does not matter. Part of what makes a sports car "sporty" is the speed that you experience when you hit the gas pedal.

The specifics of what make a sports car sporty will never be universally agreed upon, but there are specific perspectives that are more commonly accepted within communities. The most widely agreed upon characteristics of a sports car are a low weight/power ratio and two doors. Some less agreed upon aspects are high horsepower, high top speed, bright colors, and a high price. I believe that high horsepower is not necessary as long as the car is speedy in some way, whether that be 0-60 or top speed. However, a 0-60 time less than 5 seconds is very impressive and great amount of fun for a sports car. Caroline Carter wrote, "Sports cars can also feature V-6 or V-8 engines," (Caroline, What) which sounds limiting because some of the worlds best, most well known sports cars have V-10s, V-12s, even up to 16 cylinder engines. Even if the majority of sports cars are V-6 and V-8 they are most definitely not limited to just those amounts of

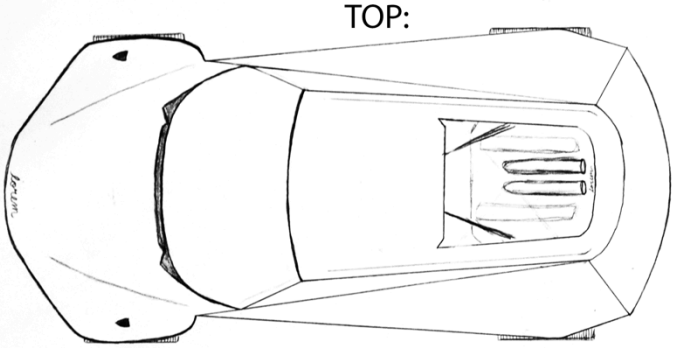
cylinders. My own Volkswagen Golf could be considered a sports car even with a 5-cylinder engine, simply due to its modifications. Carter also mentions that all sports cars are required by law to have a certain number of airbags in certain places that qualify them to meet safety standards.

One of the most debated aspects of sports cars that Carter brings up is whether a sports car should have a stick shift or paddle shifters. Paddle shifters allow the driver to change gears manually, without using a clutch. It is more efficient, however it is far less skillful and sportsmanly to use. Carter states, "the manual transmission or stick shift used to be the preference because the driver felt more in control" (Caroline, What). This statement is true, yet from my perspective, it seems that sports cars with a manual transmission are still preferred, especially because the alternative on modern sports cars is paddle shifters. Paddle shifters are fitting for cars that are in the running to break the 0-60 world record, but many of today's sports cars that are not nearly that fast do not even have an option to get a stick shift. This is a disappointment because a stick shift adds an entire element of fun and control to the driving experience.

Sports cars are built with intention and a buyer in mind, and often times people with rival sports cars get picky about details when there isn't a right or wrong answer. An example of this is manual transmission vs. paddles vs. an automatic transmission. Because I consider myself a part of the sports car community I am opinionated, but I understand that there is no correct answer. What I believe is that a true sports car compromises some power and efficiency for the thrill of a stick shift transmission. Paddle shifters a good way to keep some of the fun in shifting gears without losing time or power, but they feel far less exciting. Automatic transmissions are often smart, but it feels extremely unsportsmanlike to drive a sports car with automatic transmission. Writers and sports car enthusiasts Alex Ristovic and Eric Plasencia wrote an article called "Death of the True Sports Car" in which they suggest that they immense quantity and quality of technology packed into modern sports cars is taking away the sport. Some sports cars are overdone with technology and are therefore less exciting, yet all sports cars are just vehicles built to achieve tight turns, fast accelerations, attractiveness, and general excitement. Even the most high tech sports cars can achieve this. Alex Ristovic and Eric Plasencia write, "I value skill above all else," (Alex Ristovic and Eric Plasencia, Death) which is very logical. However, driving a sports car does not have to be a competition. Skill is not needed to have a good time in a sports car or even to create exhilarating tension with the driver; it is only used to impress others. Showing off does play a part in owning a sports car, but the owner of a sports car should have a more personal connection with their car, such as a love for the handling, styling, or speed, rather than an ego-driven explanation for owning a sports car.

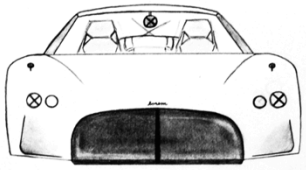
Throughout the process of designing my own car as a work of art, I took inspiration from a number of production sports cars and other technical sources. I ended up using a car called the Zenvo ST1 as a scale to base the Lorem on, even though there are minimal similarities between the ST1 and the Lorem that I designed. The ST1 is more of a template than an inspiration, although some of the general shape of the car carries over to the Lorem. My actual design takes styling cues from cars such as the Hennessey Venom GT, Bentley Continental GT, McLaren P1, and Datson 510, and Ferrari 458. These preliminary sketches show the Lorem's similarities with other cars.

TOP:

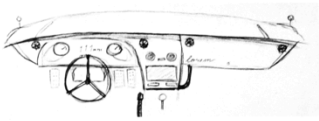


Lorem by Dirk

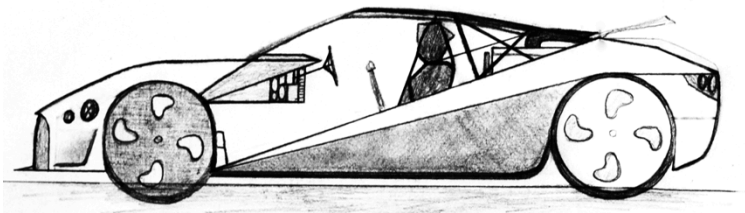
FRONT:



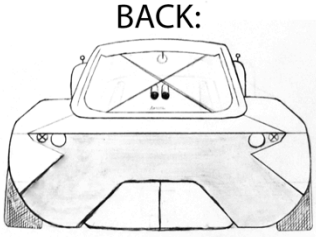
DASHBOARD:



SIDE:



BACK:



McLaren P1

Bentley Continental

Datson
510

Ferrari
458

The top view shows an exposed engine that is inspired by the Ferrari 458's visible engine, and the rear has very similar lines and lights to the Hennessey Venom GT and McLaren P1. The front end is inspired by my idea of what a sportier Bentley Continental GT would look like, with a lower more rounded grill and mean round headlights. The mirrors shown in the top and front view are out on the hood like a Datson 510, and the headlights are also similar to a modified 510. I also used many tips and tricks used by sports car designers simply to draw my sketches and get my ideas on paper.

Sports car design is important for more than just another form of transportation. In fact, the design of sports cars is an expression of culture and personality. Horacio Pagani, founder of supercar company Pagani Automobili once said, "An object is able to transmit emotions when there are the manual skills involved, the genius from the head being expressed through skilled hands, passion, heart, only then does an object come to life, is given a soul, and is able to tell a story" (Sarhangpour, Pagani). In this statement, Horacio Pagani sums up the goal of my project and of many sports car designers. The type of car that a person drives says a lot about a person, and that is only truer for sports cars. Certain sports cars value different characteristics, and therefore appeal to different groups. Some automakers even make their core values into a motto that appeals to very specific cultures and groups. Therefore, the Lorem is a personal expression of my own culture and interests in its design and specs. However the Lorem is not a perfect form of self-expression, because my own identity is constantly changing. Also, there will never be one car that I can say is perfect due to the fact that I value more characteristics than could possibly be packed into one car successfully. The amount of characteristics that go into a sports car must be limited to fit a theme, and to keep the car sexy.

Bibliography

Albert2k. "Datson 510 from 1971." *123Macmini.com*. N.p., 30 Mar. 2012. Web. 28 Apr. 2015. <http://www.123macmini.com/forums/viewtopic.php?t=30203&sid=bd5ac64562ddd2ed8e91f21b28870cc9>.

Alex Ristovic and Eric Plasencia. "Death of the True Sports Car." *The Smoking Tire*. N.p., 12 Mar. 2013. Web. 27 Apr. 2015. <http://www.thesmokingtire.com/2013/death-of-the-true-sports-car/>.

Art and Architecture. "City Hall in Wood." *Art and Architecture – San Francisco*. N.p., 2012. Web. 21 Apr. 2015. <http://www.artandarchitecture-sf.com/tag/my-car>.

Art Center College of Design. "Transportation design." *Art Center College of Design*. N.p., n.d. Web. 21 Apr. 2015. <http://www2.artcenter.edu/gallery/transportation.php>.

The Auto Editors of Consumer Guide. "How Muscle Cars Work." *HowStuffWorks.com*. N.p., 16 Jan. 2007. Web. 3 May 2015. <http://musclecars.howstuffworks.com/muscle-car-information/how-muscle-cars-work6.htm>.

"Automotive design." *Wikipedia*. N.p.: n.p., 2015. *Wikipedia*. Web. 21 Apr. 2015. <http://en.wikipedia.org/wiki/Automotive_design>.

AutoweekUSA. *Car-design student projects at the college for creative studies - autoweek*. *YouTube*. N.p., 14 June 2012. Web. 21 Apr. 2015. <https://www.youtube.com/watch?v=XtpwuPzkmcg>.

Baxter. "Canibeat." *Canibeat*. N.p., 2013. Web. 3 May 2015. <http://www.canibeat.com/#>.

Blaze, Donya. "Dangerous Curves: Cars Inspired By Beautiful Women." *The Urban Daily*. World Press, 15 Mar. 2013. Web. 2 May 2015. <http://theurbandaily.com/playlist/dangerous-curves-cars-inspired-by-beautiful-women-photos/item/2135549/>.

Car Design News Ltd. "Car Design News." *Car Design News*. N.p., 2015. Web. 21 Apr. 2015. <http://www.cardesignnews.com/site/home/>.

Carter, Caroline. "What Makes a Car a Sports Car?" *eHow*. Demand Media, 2015. Web. 27 Apr. 2015. <http://www.ehow.com/about_6317013_car-sports-car_.html>.

Colman, Dan. "A Harrowing Test Drive of Buckminster Fuller's 1933 Dymaxion Car: Art That's Scary to Ride." *Open Culture*. N.p., 25 Apr. 2015. Web. 27 Apr. 2015. <http://www.openculture.com/2015/04/a-harrowing-test-drive-of-buckminster-fullers-1933-dymaxion-car.html>.

"dual_port_8_valve.gif." *Archer Tower*. Archer Tower, 2013. Web. 2 May 2015. <http://www.archertower.com/hendrickson-air-ride-valve-diagram/>.

High School Car Designers TV. *How To Get Into A Car Design School*. *YouTube*. N.p., 21 May 2014. Web. 21 Apr. 2015. <https://www.youtube.com/watch?v=4kZMV7YfQAw>.

Hot Wheels TV. *Hot Wheels Designer Larry Wood's Garage*. *YouTube*. N.p., 30 Aug. 2012. Web. 21 Apr. 2015. <https://www.youtube.com/watch?v=8r6YxBnA3e4>.

HowStuffWorks. "How sports cars work." *How Stuff Works*. N.p., 2015. Web. 22 Apr. 2015. <http://auto.howstuffworks.com/sports-cars1.htm>.

Hurlin, Tara. "Rat rods." *Hagerty*. N.p., 10 Feb. 2014. Web. 3 May 2015. <https://www.hagerty.com/articles-videos/Articles/2014/02/10/Rat-Rods>.

Igaby. "Ferrari 458 Italia Made In Scratch Vector Mode." *Scratch*. N.p., 18 Jan. 2015. Web. 28 Apr. 2015. <https://scratch.mit.edu/projects/36744416/>.

"Import/ sport compact race scene." *Asian Nation*. N.p., 2015. Web. 3 May 2015. <http://www.asian-nation.org/import-racing.shtml>.

Jaynes, Nick. "DON'T LAUGH: CHEVROLET MIGHT MAKE A HYBRID CORVETTE." *Digital Trends*. N.p., 31 Aug. 2013. Web. 2 May 2015. <http://www.digitaltrends.com/cars/dont-laugh-chevrolet-might-make-a-hybrid-corvette/>.

Mario. "Street Racing Culture." *Popular Culture*. N.p., 2 Nov. 2010. Web. 3 May 2015. <https://psupopculture.wordpress.com/2010/11/02/street-racing-culture/>.

Newsday. "Evolution of iconic sports cars." *Newsday*. N.p., 2015. Web. 21 Apr. 2015. <http://www.newsday.com/classifieds/cars/new-york-auto-show-evolution-of-iconic-muscle-and-sports-cars-1.6571399>.

Orlove, Raphael. "Your Guide To The World's Most Hated Car Culture: Donks." *Jalopnik*. N.p., 11 Jan. 2013. Web. 3 May 2015. <http://jalopnik.com/5974931/your-guide-to-the-worlds-most-hated-car-culture-donks>.

Patton, Phill. "Lowriding: This Culture Is About More Than Cars." *The New York Times*. N.p., 12 Dec. 2012. Web. 3 May 2015. <http://wheels.blogs.nytimes.com/2012/12/04/lowriding-this-culture-is-about-more-than-cars/?_r=0>.

Peters, Ema. "What Makes One Vehicle a True Sports Car." *HubPages*. N.p., 4 Mar. 2014. Web. 27 Apr. 2015. <http://emapeters.hubpages.com/hub/true-sports-cars>.

Sarhangpour, Rouzbeh Sub. *Pagani Automobili explores the inspiration for the Huayra super car*. *YouTube*. N.p., 17 May 2013. Web. 2 May 2015. <https://www.youtube.com/watch?v=kLdD1Z0HGMk>.

Svilans, Peter. *The Bruce Weiner Microcar Museum*. Madison: n.p., 2013. Print.

Tesla Motors. "Tesla." *Tesla*. N.p., 2015. Web. 21 Apr. 2015. <http://www.teslamotors.com/>.

TheArtCareerProject. "Get your motor runnin' with an automobile design career!" *The Art Career Project*. N.p., 2014. Web. 21 Apr. 2015. <http://www.theartcareerproject.com/automobile-design-career/584/>.

Timelines.ws. "Timeline cars." *Timelines of history*. N.p., 2015. Web. 21 Apr. 2015. <http://www.timelines.ws/subjects/Cars.HTML>.

Traverso, Marco. "Car body design." *Car body design*. N.p., 2015. Web. 21 Apr. 2015. <http://www.carbodydesign.com/>.

"2014 McLaren P1 Test Drive at Bahrain Read more at http://guides.programming4.us/cars_motorbikes/2014-mclaren-p1-test-drive-at-bahrain.aspx#o1H90ICOtkY8G5JQ.99." *Microsoft Certification*. N.p., 6 Oct. 2014. Web. 28 Apr. 2015. <http://guides.programming4.us/cars_motorbikes/2014-mclaren-p1-test-drive-at-bahrain.aspx>.

"2016 Bentley Continental GT – Review." *Car Sale 2016*. WorldPress, 1 Mar. 2015. Web. 28 Apr. 2015. <http://carsale2016.com/wp-content/uploads/2015/03/2016-Bentley-Continental-GT.jpg>.

Zurb. "Design Process." *Zurb University*. N.p., 2015. Web. 21 Apr. 2015. <http://zurb.com/word/design-process>.