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Green Vehicles

The topic I have decided to do my essay on is green transportation. I chose green transportation because I am interested in vehicles and other means of transportation. I really got interested in green vehicles when my friend purchased a white Toyota Prius, a hybrid car. I found it interesting how on the dashboard above the radio there was a little screen monitoring the energy and other things going on with the car while he drove. When he went downhill the car would charge the battery back up to 100%, and he explained me how the car uses gas when it goes up hill. I wanted to know more about how hybrids work, so I decided to use this essay as a chance to research more on cars like the Toyota Prius. So far I know that there are green buses that run on electricity and gas, and a lot of green cars out there, from hybrid to full electric. I also know that there are people researching new ways to allow a car to run. In this I search paper, I will tell you about the history of electric and hybrid cars. I will also try to figure out how electric and hybrid cars will purchased get used by more people.

I have always wondered how long ago the first green car was invented. After researching on this for a while, I've discovered that green cars were being invented as far back as the 18th century! The very first one would be the "Horseless Carriage" which was created some time between the 18th and the 19th century. A Scottish inventor named Robert Anderson built a carriage that ran on battery sometime between 1832 and 1839. (Bellis, 2011) This carriage ran on batteries that were not even rechargeable

so it didn't have much of an impact on automobiles today, but Anderson is still credited with being the inventor of the first electric car. It wasn't until the early 1890's before a somewhat successful electric car was invented. The credit goes to William Morrison of Des Moines, Iowa, whom is said to be "decades ahead of his time" for his invention.(Lampton, 2010) Morrison's electric car could carry six passengers, and go up to speeds of up to 14 miles per hour (Some sources claim that it could go up to 20 miles per hour), which is incredibly fast considering the fact that horses were the common choice of transportation at the time. Although this was a great feat, Morrison's electric car needed to be recharged every 50 miles which did not allow his car to be a practical mode of transportation.

Many electric cars were invented over the next century, well into the 20th century. In fact, electric cars were the main choice of cars between electric, steam propelled and the internal combustion engines. This went on until about 1914, when the internal combustion engine cars were made more affordable. They became the choice of car because around 1920 roads that allowed people to travel from city to city were built, making the electric car inefficient for traveling(Bellis, 2011).The internal combustion engine cars could go on for much longer distances at the time, but were pretty expensive. Henry Ford changed this when he came up with a sophisticated production line technique, taking electric cars out of business for a while. Now in the 21st century, new electric and hybrid cars have swept through the automotive industry once more.

I'm sure we all think we know the answer to this, but I still did research on this segment; why were green vehicles invented? Of course most, if not all, know that

they were invented for either one of two things; to save money, or to save the environment. Although these reasons are right, there is more to it than just that. Hybrids were a way to make more money for a car company, or even a way to save our nation some money itself.

Hybrid and electric cars were also invented because people take note of interesting new things. With internal combustion engines being the number one type of car being used world-wide, and of course possibly the only type known to most, a car running on electricity *alone* or even electricity and gas would be quite impressive. Just hearing about a car like this seems really high-tech and gives off the idea of your country or nation moving forward in technology. If people take a huge interest in this, sales will go through smoothly and quite frequently. The creation of modern green vehicles were not only invented to save the environment or to save you money, but just to make money alone.

So supposedly hybrid cars are good for the environment and save you *a lot* of money when it comes to gas. If this is true, then why are people not switching or purchasing more of these amazing vehicles? Why keep a low mileage, polluting car, or even purchase a brand new car that does *not* save you money in the long run? There are endless possibilities on why, but the main reason that caught my attention was: personality. Yes, personality is a huge factor in this situation. Scott de Marchi and James T. Hamilton did a survey on individuals who own, or may own in the near future, a car. Each question in the survey would earn a point towards or away from certain traits. These traits might influence what kind of car a person would probably buy. An example would be someone who said that he or she always slows down for a yellow

light. This person would lean towards the “risk-averse” trait. Another example would be someone who is not too keen on trying new restaurants and chooses to visit their old favorites. Such a person would lean towards the “stickiness trait.”

The first trait I will talk about will be the “altruism” trait. The authors de Marchi and Hamilton call these kinds of people “Idea Consumers.” A person who is altruistic is a person who is unselfish and concerned for the welfare of others. Somebody who donates blood or gives to charity regularly would score high toward this trait. Being altruistic would cause someone to be in the “green” consumer population. Scott de Marchi explains: “The feeling of doing good. A smile that recycling a can puts on your face is enough to make an altruistic person a ‘Green Consumer.’”(Brandyk, 2009) If a green consumer was told that by purchasing a hybrid car they would save the environment, they would feel good about purchasing one.

Scott de Marchi and James T. Hamilton stated that Green Consumers not only bought the products, but the ideas as well. Most consumers’ purchases nowadays are not associated with ideology, or the body of beliefs that guides a person or group. People usually only think about the practicality or suitability for use when they purchase goods, instead of the ideas they express by buying those things. An example would be somebody buying a Prius. Purchasing a Prius says something about the consumer. This person is concerned about gasoline consumption or annual gas funds. A Green Consumer buys the idea, “You can save the environment if you purchase this vehicle”.

"In a purely I-want-to-save-the environment sense, the extra money to buy a Prius makes no sense," says de Marchi. "You could buy a \$10,000 or \$15,000 cheaper car and use that money in a way to save the environment." But Green Consumers don't

do that because they believe that the Prius will save the environment and will show the world how “green” they are, like being given a tangible award where others looking can see, “Hey that guy is helping the environment! He’s driving a Prius!”

The next trait I will talk about will be “Time Minders.” A key reason as to what differentiates a Green Consumer and a normal consumer would be how each individual looks at the short-term and long-term costs and benefits of what they buy. An example would be children wanting lollipops. Children would much rather choose to get a lollipop on the spot, then waiting for a few days and getting even more lollipops at once, at a much cheaper price. A Green Consumer would be willing to make the sacrifice now for future benefits, versus a normal consumer thinking about short-term benefits only. “Credit cards exist for a reason, even with the often spectacular rates they charge,” says de Marchi. Green Consumers think about the future and consider how what they do now can benefit them in the long run. An example would be someone wondering if they were to spend an extra \$100 to get a better washing machine, would it save them energy in the future? Normal consumers are *not* going to think that far ahead, de Marchi claims. Most people would just rather not wait. He calls the people who will wait “Time Minders”.(Lampton, 2010)

The final trait I will talk about is the “Me Too Trait.” A very packed and busy restaurant would draw in more customers because the fact that it is busy indicates that it is popular(Brandon, 2009) . People of the “Me Too Trait” pay close attention to the decisions of others when making a choice for themselves. For the people with this trait, they would not be willing to go green unless the people in their network (friends, family and co-workers) did. If they saw people in their network go green, they would most

likely go green as well. Belonging to a social network really influences people of this trait. An example would be a person of this trait who has friends and family that do not care about the environment. If this individual's friends and family didn't care about the environment, he or she would probably follow suit.

In my opinion a hybrid needs to be advanced technology-wise in order to be put in the minds of consumers. When I first heard of the hybrid coming out, I found it really amazing because it sounded like a car from the future! The technology used must comply with what producers are advertising, and function in a way that would attract all sorts of customers. It should attract green consumers, because it is being put out there as an environmentally safe car that causes less pollution. It should also attract consumers who are trying to save money, because the hybrid should save you money since it is not as expensive as a luxury car, being priced at about \$23,000. Not only that, but because it has such a high mileage per gallon of gas due to the technology of the car, it saves you money in the long run as well since you don't have to buy gas as much! Now allow me to explain just how these amazing vehicles work.

Now I'm sure that by now you may, or may not, be wondering, "So how do these hybrids work?" or "Just what *is* a hybrid?" Well a hybrid, by dictionary definition, is something that is "bred from two distinct races, breeds, varieties, species, or genera." That's exactly what a hybrid car is! A car that runs on gasoline *and* electricity, or a car that uses electricity to empower the combustion engine. So how does that work? Well the batteries used in the full hybrids are recharged using "regenerative braking." What that is, is that when the car breaks, the battery would capture the kinetic energy, or energy formed from motion, created when using the breaks. Some hybrids use

the combustion engine to generate electricity by spinning an electrical generator to either recharge the car battery, or directly feed power to the electric motor the car is using. (Dunn, 2007) A mild hybrid however, just uses the electric motor to empower or increase the performance of the internal combustion engine when it needs the power boost. Most modern mild hybrids nowadays use the stop/start hybrid system. The stop/start hybrid system is where gasoline engine gets shut off when it isn't moving, like stopping at a stop sign or a red light, and starting it up again when you press the gas pedal to accelerate the car(Dunn, 2007) .

Nowadays, more and more people are taking note of the O-zone layer being depleted by pollutions caused by us humans. The pollutions caused by car exhaust and other substances that leak into the air are creating holes in the O-zone layer, which causes the “green house effect”. The green house effect is when gasses, and other harmful substances caused by pollution, trap heat that the sun radiates causing the area to warm up in temperature. With those holes appearing in the O-zone layer, we don't have much protecting us from those harmful UV-rays.

There are some people that would really get out of their own way of life just to help the environment and to try to fix the green house effect problem. Now to someone who manufactures daily usable goods, such as cars, this is a huge marketing opportunity. Hybrids and electric cars have been out of business for nearly a century, as I have mentioned earlier in this paper. Environmentally friendly people now take up a percentage of the population in this country which gives all car manufacturing companies an opportunity to make more money; what better way could car manufacturing companies make money, then to sell a product which was *also*

environmentally friendly! At an affordable price, being around the same price as an average internal combustion engine vehicle, the hybrid car would be popular amongst environmentally friendly people. An electric car, being a lot more expensive, could catch the attention of those who were thinking of buying a more luxurious, expensive or unique vehicle.

Over the recent years, gas prices in America have sky rocketed from what it used to be. Gasoline was becoming quite expensive because we were running out of it, and scientists figured that with the way our country uses it, we would be out of it in a short period of time. After that short period of time, we would have to start investing in other country's and buying overseas gas(Donald, 2003). This also gave car manufacturers a chance in marketing a product which could aid those trying to save money, or save our country's gasoline to last longer. A Toyota Prius can get up to 48-51 miles on a gallon, nearly doubling the mileage on a normal, but popular, internal combustion engine widely used today! Not only would you save money on gas because your hybrid car would run much longer, you also would not purchase as much as so you could be making a difference in how long our gasoline will last.

For my essay I interviewed Alan Li, who is an owner of a white Toyota Prius. I asked him *why* he bought the Prius to which he responded with, "Gas is really expensive nowadays. Because I drive everywhere I go like from home, to school, work and anywhere else, I spend up to \$50-\$75 every 1-2 weeks! It burns a hole in my wallet." The next thing I asked was, "How much do you know about the Toyota Prius?" Alan said, "I just know that it has really good mileage. I also know it causes less pollution and uses gas *and* electricity, but I think everyone knows that much." Another

question was “Did you consider how Eco-friendly the car is, or how it could help the environment purchasing one?” Alan responded, “To tell you the truth, I really didn’t consider it at all. I mean, I know it causes less pollution from what I’ve read and seen on the advertisements, but that wasn’t going through my head when I was buying it. I was just thinking about being able to spend less on gas and saving me money over time.”

The other person I interviewed really briefly was Mr. Go from the Toyota Dealership at 3800 Geary Blvd. Mr. Go explained to me how Toyota’s hybrid cars were pretty popular in sales compared to the traditional internal combustion engine cars they sold. He stated how in comparison, the price difference and benefits from buying a hybrid of theirs versus a non-hybrid from Toyota, the hybrids really did shine in the eyes of their customers when they were looking for a benefiting car. Being priced at about \$22,800, excluding tax and such, along with the 48-51 all rounded estimate mile per gallon which is about a whole 20 mpg, if not more, than their other car models, it really is a favorable choice amongst consumers looking in to buy a car. He also gave me his opinion on how Eco-friendly their hybrid cars is. “Everyone has their own view or opinion on what “Eco-friendly” really is,” Mr. Go explained. “To which I believe our Prius is a lot more Eco-Friendly than most cars being driven around nowadays.”

I learned a lot more than I could have possibly imagined about green vehicles, or green cars to be more specific. I learned things I did not expect to during this research paper. I found out about our nation’s gasoline supply, factors in the sales of cars that I would never think mattered. Who would of thought that personality had such a huge impact on what kind of car you were going to buy, or whether or not you would get a green car or not? It never occurred to me that the social network you are a part of

really affects your daily life when it comes to choices, not only about cars but just about everything you do. During this research I have developed a stronger interest in green cars. There is now a higher possibility of me being interested in entering a job field related to green vehicles. I could choose to major in something related to green vehicles as an alternative choice, if not my main now. Who knows what kind of new hybrids or engines may come up in the near future?

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