The Effectiveness of Games

As Persuasive Media

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Introduction

Present in all media is the rhetorical ability to persuade. Affecting attitudes and opinions is an ancient pursuit that has been accomplished through the oratory, visual, textual, musical, cinematic, and most recently, interactive media. In the past, games have been viewed only in the context of entertainment and competition, persuading only on the topic of the player's or team's aptitude for the game. The advent of electronic games has added new possibilities for complexity and narrative to games, expanding their scope into a rhetorical medium. This potential has largely been ignored by the mainstream game development community which has continued the entertainment-centric tradition that games have always been associated with. However, some developers have recognized the rhetorical potential of interaction and have created games which aim to persuade.

This project involves the development and testing of such a game. The project seeks to determine if a game can persuade and how effective its persuasion is in comparison to an article that has the same rhetorical purpose. 39 people divided into three groups complete a survey which gauges their attitude on a topic. One group plays the game before completing the survey, one group reads an article, and one group does neither. From the results of the survey, the persuasive effect of the game can be determined. Factoring in availably of participants, almost

all participants are college students who generally indicated that reading and playing electronic games constituted part of their leisure time.

While only still in its infancy at around 40 years of age, the video game industry has become one of the fastest growing modern technological industries. Yielding a hefty $20.2 billion dollars in 2009, the industry is quickly climbing the rungs of the entertainment industry ladder (Brightman, 2010). Classic video game character names, such as Mario and Zelda, are now household names, and you would be hard pressed to find an American child who hasn't played the latest Call of Duty game. With the relatively recent permeation of games into the pop culture scene, gaming culture has become of way of life for more than just the garage-programmer-nerds of yesteryears. As the popularity of games grows, it would seem like the cultural impact of games grows as well. More and more nowadays developers are breaking the mold of the traditional games-for-entertainment. Serious games meant to educate the player about often controversial topics have started to reach the surface of the gaming world and other alternative means for games have also grown from this seed. Advertisements in games have been prevalent since the cameo of McDonalds in the graphical version of *Moonlander* released in 1973. The popularity of games within the teenage demographic has been harnessed by educators in a recent trend of games for education, aptly referred to as Edutainment. However, due to its relative immaturity, the game industry often struggles to be taken seriously when compared to older more mature media outlets, such as the books or newspapers. The industry seems like a teenager struggling to find its way into the adult world but still too young for the more mature industries to take notice. However, games are a unique blend of art and technology, story and interaction and it is only a matter of time before they carve out their own legitimate niche within

the serious media world. With such a strong, interactive connection with the player, games can be used as powerful persuasive tools.

Rhetoric, the art of using language to persuade, dates back to Ancient Greece with the Sophists around 600 BC. Rhetoric skills were very important for political discourse and widely used in public forums, courtrooms and other assemblies. The study of rhetoric has branched across many fields of study including fine art, natural and social sciences, journalism, architecture, as well politics and law. Many modern professions also use rhetoric heavily, including marketing and advertising. Traditional rhetoric can be broken into three distinct categories, logos, pathos and ethos. Logos refers to logical discourse, often referencing hard facts as evidence. Pathos, on the contrary, appeals to the listener's emotion to persuade. Finally, ethos refers to the authority or honesty of the speaker, or how qualified they are to speak on the subject (Wheeler, 2010). The art of rhetoric is used heavily in the mass media nowadays, whether in the news, magazines, film or books. More recently the term rhetoric has also been applied to the visual arts which can be seen in advertising and graphic design.

The video game industry started in 1971 with the first commercially available video game, named *Computer Space*, a coin operated arcade cabinet game created by Nolan Bushnell and Ted Dabney (Stahl, 2006). Nutting Associates bought the rights to the game and manufactured 1,500 cabinets to be available to the public. However, its commercial performance was limited and Bushnell and Dabney decided to break away from Nutting Associates and founded Atari Inc. Their second game, *Pong*, was the first commercially successful video game, selling over 19,000 copies (Stahl, 2006). The late 70s and early 80s saw much more commercial

success with popular titles such as *Space Invaders*, *Asteroids*, and *Pac-Man*. The 70s also saw the rise of home computers, which facilitated the growth of hobbyist game developers.

The gaming industry experienced an incredible boom and crash in the early 80s. As computer technology grew, specialized gaming computers, such as the Apple II and Commodore 64, were released commercially and several more capable consoles reached the market as well, most notable the ColecoVision, Intellivision and Atari 2600 (Stahl, 2006). These new machines allowed for technical and graphical innovation which spawned many of the game genres that permeate the market today.

However, as many companies tried to jump on the bandwagon with the commercial success of the industry, the market became overly saturated with dozens consoles and hundreds of sub-par games. With the coinciding rise of personal computers, consumers were simply given too many choices and confusion followed, ultimately leading to the North American video game crash of 1983 (Agger, 2009). The crash had several long and short term effects on the market. First, several companies, having taken a great financial hit in the crash, abandoned the video game industry entirely. Many distribution centers concluded that videos games were simply a fad and were going out of style. This presented a problem to surviving companies such as Nintendo, in the following years. The crash also marked the shift of the home console market from the US to Japan and marked the rise of Nintendo as a leader of the industry (Falkner, 2009). Despite having some trouble selling games in the US, Nintendo took several measures to insure that another crash would not happen. They created the Nintendo seal of approval to insure the quality of games and also imposed limitations on third-party publishers so that they were only allowed to publish five games annually on Nintendo systems.

The industry bounced back with Nintendo's release of the Nintendo Entertainment System (NES) bundled along with the very popular *Super Mario Bros.* The latter part of the 80s saw the births of several widely successful game franchises that still survive to this day. In 1986 *The Legend of Zelda* franchise got its start and that same year the *Dragon Quest* series made its debut with *Dragon Quest*, spawning hugely successful franchise in Japan and North America.

The video game industry further solidified its position as a mainstream player in the entertainment business through the 90s with the development of larger publishing companies, higher budget games and larger production teams. The 1990s also marked the beginning of full 3D games, causing the rise of several popular genres, including the first person shooter, MMO, and real-time strategy game. Arcades grew sparser as home consoles grew in popularity and handheld platforms, such as the Game Boy, became more prominent. As technology grew more powerful, the complexity of games increased graphically as well as gameplay-wise. With each generation of consoles, the potential for video games grows significantly. *Super Mario 64*, one of the first full 3D games, became a flagship seller for the N64. Each subsequent generation of consoles has further solidified the video game industry's position in mainstream entertainment. Online gaming has revolutionized the social impacts of gaming. Blizzard's hit title, *World of Warcraft*, has over 11 million subscribers across the globe and has become an icon in not only gaming society but also in pop culture (Gray, 2008).

As games grabbed hold of mainstream popularity, they also grew as an artistic medium. Although far from being widely accepted as a legitimate artistic medium, games have come far from the simplistic, pixilated pieces of old. As seen with several other entertainment industries such as comics and film, commercially based trades tend to have a harder time being viewed as

art until they reach a certain level of maturity and establish an identity of their own. Modern video games often rely on film techniques to present information which is quite possibly detrimental to growth as an artistic medium. Games have not yet established a unique identity, and although piggybacking upon the film industry has helped games as a commercial industry, it has not elevated its position in the artistic sense (Clarke, 2007). It is clear that many game developers who create the art assets are talented artists, but the commercialization of the art has somewhat corrupted the work from an artistic perspective. Despite sporting impressive graphics, licensed games based on films tend to fall by the wayside soon after release simply because they don't offer any significant growth for the medium. Despite the near-perfect rendering of players, sports games such as *Madden* would not be considered art. Simply making a game look pretty is not the key to legitimizing games as an artistic medium. In fact, it seems that the focus on the aesthetics of games has created the preconception that it is more important for a game to look pretty than to innovate with mechanics. However, the focus on commercializing games has opened them up to other applications.

The popularity of games with teenagers and children has provoked the question of whether or not this appeal can be harnessed in the field of education. If there is one thing that games have mastered, it is that they are very good at teaching the player how to play them. However, is it possible for them to teach other things, like mathematics or chemistry? Educational games, often referred to as edutainment, have been gaining popularity over the past few years. It has been found that educational games are particularly good at teaching specific skills or addressing certain problems where specific objectives can be mapped out (Purdy, 2007). These games often allow student to experiment and interact with a situation and figure out problems by manipulating different variables within a given space. For example, a simulation of

a political system would allow users to control several variables and see what kind of effects they have on a population. However, educational games tend to have a negative stigma associated with them as games had their start as a purely entertainment based industry. Edutainment games tend to struggle with more complex subjects such as calculus and thus are often targeted towards a younger audience.

Educational games are just a subset of a growing genre known as serious games. Serious games are designed for a primary purpose other than entertainment. Serious games can be used to train, educate, or persuade people. A serious game could look and play like a game but somehow correspond to non-game material or processes, such as military training or political simulations. Military simulations offer the advantage of providing tweakable, realistic and safe scenarios. These simulations often strive to be entertaining to play as this makes them engaging and immersive. Oftentimes serious games are used as advertising or marketing for a product. Advergames are presented in a few different formats. Some are used solely as promotional material in order to attract the player to a company website or to make them more aware of the product. These games are often web-based and may consist of reworked arcade classics. Others tend to use a more subliminal form of advertising. Oftentimes sports games will have in-game billboards for certain products. Recruitment tools, such as America's Army, also fall under this category.

There have been serious game projects initiated with intent to gauge persuasiveness similar to this project. However, a feature of this project that sets it apart from others is that it places the data collected on the persuasive power of the game in perspective by testing the persuasiveness of a typical article which advocates the same stance on the same subject. In

addition, the rhetorical topic chosen was a relatively obscure one about which people are unlikely to already have any strongly-held beliefs. These general differences aside, other projects similar to this show potential to corroborate the results once they are attained; the projects most analogous this project are at a post-development stage with intent to test, but are yet to publish or possibly acquire results.

Terry Lavender of Simon Fraser University developed a game in Flash about homelessness called "Homeless: It's No Game" (Lavender). Similarly to this project, the influence of the game on the attitude about the issue is intended to be measured by a survey. However, unlike the traffic game project, there is no control group; instead all participants are to take the same survey before and after playing the game. The fact that the control group method was used in the traffic game study negates the effects of people's potential unwillingness to reveal that their mind has been changed. The issue presented in "Homeless" in contrast to the strategy of this project, was chosen because it was "a well-known issue that elicits complex and often conflicting opinions among the general public and is often misunderstood" (Lavender 3). A main difference between the rhetorical techniques of the games is that "Homeless" seems to intend to persuade through its narrative's ability to evoke sympathy in the player for the homeless avatar, whose goal is to survive homelessness for 24 hours. This takes more of a narrative approach in comparison to the traffic game, which uses the mechanics of the gameplay to implement the ideas of operant conditioning: reinforcement for actions performed in agreement with the idea that traffic control systems should be removed via score added, and punishment for actions performed in disagreement via score subtracted.

This is an area among others in which the game "The PowerHouse" is more similar to the traffic game. "The PowerHouse" is "a persuasive computer game designed to raise awareness of

domestic energy consumption" (Bång, Torstensson and Katzeff). It is a "Sims"-like game operating under the premise of a "Big Brother"-like reality show with a host and contestants living together in a house. The demographic for the game is ages 13-15. Like the traffic game project, it uses a survey to compare a control group with a group that played the game. The game also uses similar persuasive techniques to the traffic game on multiple points: it uses an operant conditioning system based on points reinforcing behavior based on the desired attitude, it features hints from characters, it features archetypical characters people can relate to, and the developers also came to the conclusion that the game should have a professional appearance if it is to be persuasive.

Methodology

The first part of this project consists of the creation of a computer game that convinces players that the removal of traffic control systems is a positive thing. A written article with the same message as the game is sought out to provide perspective on the relative persuasive power of the game, because it represents an older and more established persuasive medium. A paragraph explaining the concept of shared space is written along with survey questions designed to gauge people's attitudes towards shared space. The survey with the paragraph is filled out by three groups of participants: those who have played the game, those who have read the article, and the control group who have done neither. The attitude of the game group and the control group are compared to determine if the game was able to persuade, and the attitude of the article group is used to help determine how significant any of the game's persuasive power is by comparison.

Of utmost importance to the experiment was a game to be played by the subjects. Given the need for the game to closely associate with the selected issue, it was decided that the creation

of a game, specifically designed to sway players to promote shared space, was necessary for the study. Seven weeks were spent planning and designing the game, and implementation began based on the technical design document, and the artistic design document.

How the game persuades the user is pivotal. The game was designed completely around affecting the beliefs and opinions of the player. The possible ways to attempt this are countless. Ultimately, the game was designed to persuade the player. For this purpose, an issue needed to be selected; this choice would shape the entire development of the game. The game would simply demonstrate an environment, in which one side of the issue was the clear favorite. The player would discover the benefits of the chosen side while playing, and choose the same side when presented with the survey.

The choice of issue was multi-faceted. The issue needed to be relatively unknown, to minimize prior biases. The issue would not be inflammatory or polarizing; an attempt to improve consistency in the control group. Finally, the issue would be related to something familiar and recognizable. These factors contributed to the selection of the shared space issue, a modern approach to traffic design, featuring roads without markings, signs, or symbols. Shared space roads force all drivers, cyclists, and pedestrians to rely on attentiveness and cooperation. Without specific “stop-go” direction and right-of-way, people resolve conflicts case-by-case with each other.

Biasing the player in favor of shared space meant convincing them that the current system was flawed. The game was designed to discredit the use of traffic signs and signals. It pushes qualities like attentiveness, and points to the dangers of aggressive, elderly, and even

drunk drivers. However, the player does not feel the pressure of a weighty decision, associating traffic with monotony.

Future experiments in this area could vary widely simply by changing the way the game affects the player. Games may be more or less effective as persuasive media related to certain other issues. Games might be more able to convince the player to prefer dogs, than to prefer cats, and so more experimentation is this area is desired. Of great concern to the public is the ability of videogames to make people act violently. If video games do have this capability what else might they be able to do? And what could they be used to accomplish?

The art for the game was designed to be simple but realistic. The style would not distract the player, allowing them to focus on the tough technical task of the gameplay. The detailed character portraits added attractive visuals when the player receives alerts or asks for hints. The cars had two attributes; model and color. Recolors of several different car images worked well with the simple roads and grass tiles. Going with the traffic theme, the user-interface takes the form of highway road signs.

Programming began on October 27th and presented a hulking task. Creating a feature complete game is seven weeks made fast development a high priority for the technical team. Flash's potential to produce full games rapidly made it an easy selection as the development tool. However, the technical team decided to forgo the use of Flash's developing tools, opting to use Flash only to compile and run their code. The decision forced the team to create the game from scratch, but allowed full flexibility and control over the system.

The initial step was to create the engine, an object that would update the other objects in the game over and over. The engine "powers" the chief objects of the game; the cars, the roads and the intersections. The digital cars and roads act once each time the engine updates, monitoring and changing information about themselves, such as position, nearby cars, and current condition. Version 1.0 of the game consisted of two cars, and four roads converging on one intersection. The engine ran for 15 steps, and the cars printed their position each step as they moved along the virtual roads.

As soon as early art assets reached completion, they were added to the game. Little cars navigated across the screen on placeholder road images. Cars first began to interact at intersections. As more and more behavior was programmed, they followed traffic laws more and more accurately. Eventually, cars seamlessly navigated the traffic grid, expertly avoiding buildup and congestion. At this point, failure was implemented, and cars were programmed to occasionally ignore traffic signals. Accidents created delays, which created buildup, and very quickly, a bad road setup caused serious congestion. However, empty intersections were protected from the majority of the accidents. Once player control over the intersections was added, the strongest setup was, by far, clearing all intersections of signals. More art assets were completed and added, and the game reached its alpha stage.

With the major functionality in place, the next task was to implement the characters and user-interface. The characters served both in form and function. Their detailed art added to the visual quality, and they deliver instruction and hints to the player in-game. The beta version of the game featured six pages of character biographies. Instructional images took their place in the final version, but the character hints remain an important part of the final game. The game

reached its current state on January 14th, with a complete user interface as well as introduction and game over screens.

The process of creation revealed the importance of the game in the experiment. The effect of a game as persuasive medium largely depends on the game itself. The traffic game aims to persuade the player to take a side on an issue. There have been claims that video games persuade the player to be violent. The way the game attempts to convince the player, or if the game tries to convince the player of anything at all, can vary widely. Further experimentation with different games and different issues seems the obvious next step. The significance of this experiment cannot be overstated. One can only try to imagine the possible implications if a video game could be created to make someone violent, make them have an opinion or even make them want to buy a product.

Media as an entity does not simply exist without a purpose. Every written work, video, or game came into existence with a certain goal in mind. Every type of media is capable of achieving any of these goals in a variety of ways, and has been since their introduction into culture. The most recent form of media to emerge into mainstream culture is computer and video games. The primary goal of games has been focused on the entertainment for all those playing them, and to date they have been quite successful.

The popularity of games increases every year, and has turned the game industry into one of the most promising facets of entertainment. Almost everyone has some form of exposure and familiarity with games, and their accessibility increases with every new generation of technology. Obliviously there are personal computer and video game systems, but as devices

like smart phones become more widespread, any individual can play and access an immense variety of games.

With this massive market and positive attitude towards games, the game developers have the ability to try new ideas and aim for new goals. Serious games and educational games are a more common sight and have been gaining increasing support. These games designed to teach and persuade have been put into the spotlight, and their effectiveness and potential is of great interest towards anyone wishing to reach a new audience. Even if games can be persuasive, are they worth it? Is their influence comparable other forms of media, and to what degree?

Games are in fact persuasive and affect individuals in a wide variety of ways. Anything viewed in a game could potentially change how the player views something or sees the world around them. Then again, so does every form of media, so the question is; can the message of games be taken as seriously as other forms of media?

So, the Persuasive Traffic Game was created as part of an experiment to test the effectiveness of games at persuading compared to an article. The game's role is to attempt to persuade the player that shared space traffic is a viable alternative to America's current traffic standards. Players will regulate traffic through intersection management and receive feedback from in-game characters. Through the game's text feedback and the observation of traffic flow, the players should deduce that removing traffic signals improves the traffic flow.

The game has six characters: a police officer and 5 other generic and relatable personalities. Each will respond differently based on the amount of congestion on the roads. The police officer appears on the introduction and instructions pages before the game starts and

informs the player of the game's goals and rules. His text is very informative and he simply states the conditions of the traffic. The other five characters are: Average Joe, Defensive Dan, Grandma Mildred, Stressed Steve, and Inebriated Irene. When their icons are selected, they will display their opinions of the traffic and what they like or dislike about it. Each character hints that they don't like waiting in traffic and having to wait at intersections. The hints should eventually push the player towards the winning strategy to remove all the traffic signals at each intersection.

The character text is only a supplement to try to direct the player. The player can click on intersections to change them from nothing, traffic lights, to varying stop sign configurations. They will try to earn a better traffic flow rating by optimally setting up traffic. The flow rating is based on the amount of cars on the map. The more cars active, the worse the traffic is.

Though this alone does not guarantee that no signs are better, and the player will conclude that shared space will be an improvement. So, the results are rigged to a believable amount. Though the score does accurately depict their performance, the code implemented several ways to force the correct results. The first way was by lowering the score for every intersection that had a traffic signal. The second was to slow cars reactions and increase waiting times to a reasonable amount at intersections with traffic signals. Third, accidents only occur on intersections with signals, to further press that unregulated ones are better. This helps to enforce that no signals increases the flow of traffic almost instantly, so the player is more inclined to discover the correct strategy.

Though the player may have completed the game with the best traffic flow and cleared out every intersection, that does not mean that they realized that it correlates to real life, or if

they accept the game as a legitimate source of persuasion. The game mechanics alone are not effective enough to have the player believe that ideas that the game tries to sell. So, the character text made the game more personal, so the player could relate to the character's situations through their past experiences. The character text will not affect the outcome of the game, but hopefully impact what the player will take away from the game.

The player has not been formally introduced to the idea of shared space yet. At this point, know that reducing traffic signals is how to win the game, and possibly that is translates to real life. After the game, they view a short description of shared spaces. At that point, the game will either have persuaded them or not. Once they learn that the idea is real, they either believe the in game character text makes sense and that people can drive more efficiently with that road system or not. Without the character text, the likelihood of this is low, and by adding it, the player should make more meaningful real world connections and take the game as a reasonable enough simulation of how traffic could work.

The Persuasive Traffic Game uses real life comparison to try to make the situation feel real and relevant to the player, giving them the opportunity to relate to the problems faced in the game. This is not the only means to creating a game that has the ability to convince the player of an idea. A convincing game does not even need to tell the truth, it only has to feel real and credible to the player before and after playing it. Shared space could potentially be a disastrous or fictional idea, but if the game delivers a legitimate feel, and nothing seems farfetched, the game can achieve its directive.

The game went through much iteration and was modified throughout its development. Early ideas were removed, and some key features in the final version were implemented with the

hope of making an easier game to play that offered an increased chance at influencing its future audience.

At its early stages the game was very complex and the player had to control street lines, speed limits, and several other traffic regulations. This was deemed too complex and required the player to mange an unwieldy amount of tasks, and this would cause them to lose sight of the goal of the game. Leaving only the option to interact with the intersections, playing the game was easy to perform and this left the player with increased attention to the task at hand.

With just the game map, there was little to influence the player, and it was left to chance for them to understand the point of the game. In turn, the character personalities were added to the game, with text to go along with each. Their addition dramatically changed how the player could receive feedback and understand how to both solve the game and appreciate the shared space idea.

Final Game Screenshot:

Results

Data was gathered using an eight question survey, with three additional areas for subject comments. For the first 8 questions subjects could mark their responses from one to five, indicating whether or not they agreed with the given statement. A ‘one’ indicated strong disagreement, and a ‘five’ indicated strong agreement. The questions were listed on the survey as follows:

1. If the shared space model of traffic design were implemented more widely it would encourage motorists to engage with their surroundings and exercise increased caution.

2. The current model of traffic control used in the US and most of the world works adequately and there is no need to change it.

3. Traffic control systems such as lights, signs, and road markings make driving safe.

4. Removing lights, signs, and road markings in urban areas would increase the efficiency of traffic flow.

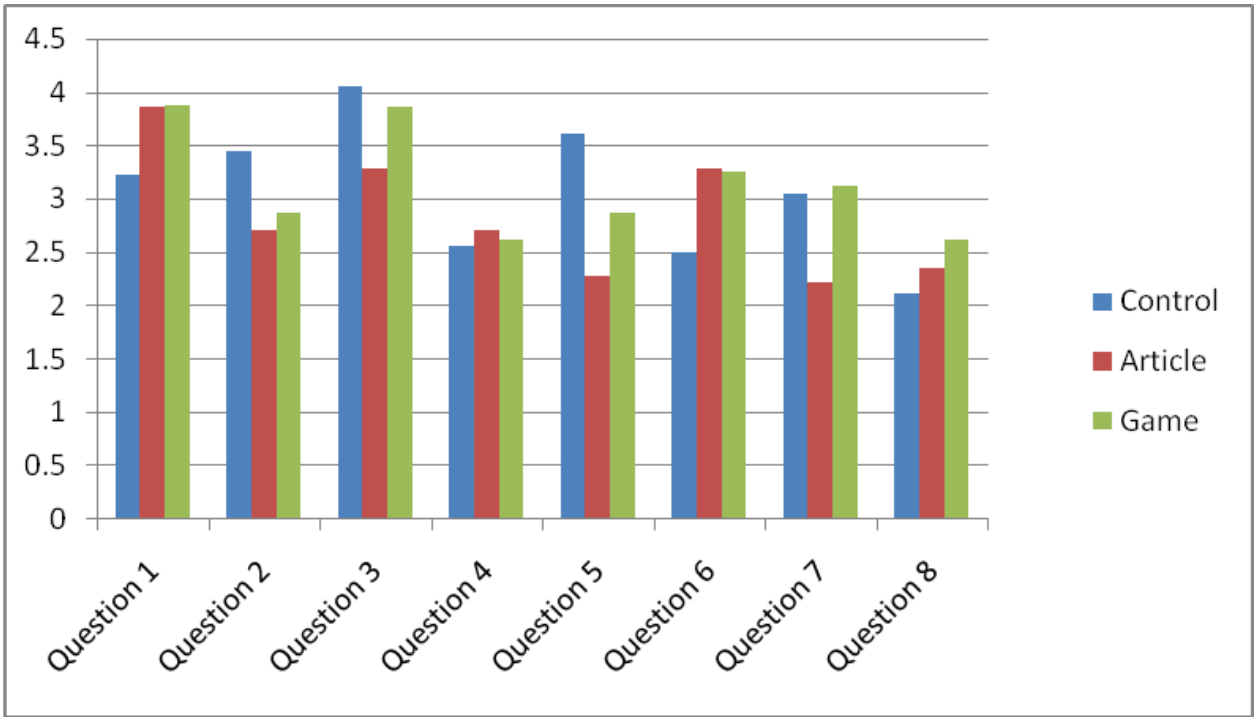
5. You would be displeased if the traffic control systems in your area of residence were removed.

6. Overall, you support the idea of the shared space model of traffic design.

7. The majority of your free time is spent playing computer or video games.

8. The majority of your free time is spent reading.

Based on responses to these questions, the following chart was created.



Responses to the first six questions show similarities between the game and article groups. Results for question one were nearly identical; both groups returned stronger support for

the shared space model. Even more telling is the difference in the control group for question two. Readers of the article and players of the game on average disagreed that the current traffic system is adaquate, indicating some real success in the experiment. Question three and question five both relate to the need for signs and signals. Subjects that had played the game still showed attachment to the current system, unlike the article group. However, this may be because the article explicitly describes how a system without traffic signals functions safely, whereas the game does not describe any alternate system. Question four shows similar results for all three groups. Although the game does try to convince the player that the removal of signs and signals could increase traffic flow, the results do not counter the hypothesis, as the article also failed to convince subjects. Question six shows a strong improvement in both the article and game groups. Ultimately, subjects that played the game showed as much support for the shared space model as those who read the article, and more than those who did neither; strong support for the original hypothesis.

Examining the game group exclusively, many interesting trends can be observed. Subjects that spend less time playing computer or video games also showed less support for the shared space model. This likely correlates to difficulty playing the game, as subjects preoccupied with learning the controls and interface might struggle to discover the winning strategy and thus not realize the point of the game. One subject who responded negatively to the shared space model left the comment, “instructions too vague,” another said “For "old guys" .5x speed may be good for helping them catch on.”

Was the game effective as a persuasive medium? The data seems to indicate a game can be at least as effective as an article. However, so many factors contribute to the effectiveness of

any medium to persuade; it is hard to say with any certainty how convincing a game could be. Even in a relation to an article, the persuasive traffic game could have mirrored the article more closely, possibly giving more interesting or relevant results. The data collected only indicates that computer and video games have the potential to be used persuasively. Further investigation and data collection is absolutely necessary before drawing any definitive conclusions.

Many aspects of the experiment could be changed and improved for further inquiries. The development of the game alone allows for infinite variants and modifications of the experiment. As for the persuasive traffic game, improved interface and instruction could have helped players discover the best method to optimize traffic, leading them to the critical message. Additionally, the characters, and their hints, were often ignored by players, preoccupied with managing an intimidating traffic grid. Overall, a simpler, more intuitive design might have yielded better results, or at least minimized the confusion felt by many players.

Though the persuasive traffic game performed as well as the article, there is no guarantee that a game would hold up similarly on other issues. The shared space issue was selected specifically because it was not polarizing or inflammatory, but this might have affected the results more than intended. Many subjects who played the game were uninterested in regulating traffic, and although that might have eased the task of convincing them, it also contributed to players losing focus and not gaining the game's message. This problem could be resolved by using a different issue, or even changing the game; putting the player in the role of a driver, who is distracted from driving by lights and signs for example. Since the game design from issue to issue can vary so drastically, and unlimited issues of controversy exist, this experiment could be

performed over and over, taking different forms each time, and would likely yield incredibly varied results.

Although the persuasive traffic game does not definitively show how effective a game can be as a persuasive device, the results gathered here beg for further investigation. Games have already caused monumental changes in society, and their significance could be exponentially greater. Writers have changed the world with mere text; imagine a writer with the ability to completely immerse his audience in his work, making the reader an active participant in the world. As games develop technologically as well as artistically, their role in society will only increase, and their effectiveness as a persuasive medium will likely determine their role. The persuasive traffic game suggests that games are just as effective, and only further experimentation can validate these momentous results.

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