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Rhetorical Roads: Examining Appeals in the Discourse of Self-Driving Cars

In recent years self-driving cars or SDVs have become a viable reality but come with controversial ethical issues. I explored these issues in my investigative field essay discussing the philosophical, legal, and emotional issues surrounding SDVs. To further this discussion I will examine two rhetorical artifacts related to SDVs and the methods they use to appeal to their audiences. Briefly, the two artifacts are an artistic model of different self-driving car technologies and a journal article from Nature magazine reporting on a widely-quoted survey on SDVs. My analysis will describe the artifacts, their purpose, and how they apply to Computer Science by detailing the rhetorical appeals and the rhetor's purpose.

To begin with, the first artifact was produced during the 2023 CHI Conference on Human Factors in Computing Systems, a meeting held annually to discuss the interactions between humans and computers. The artifact itself is a set of four models added on top of a rig meant to replicate the dashboard of a car. The first model features a steering wheel covered in spikes while the second has a steering wheel with arm crutches attached to the sides, the third includes a steering wheel with handcuffs attached, and the final one has only a table with a cup on it. In the report on the artifacts by Lupetti et al explain the metaphors behind each model.

The artifacts produced by Lupetti and the other conference members utilize pathos through overdramatized artistic renditions of the different levels of human control certain types of SDVs provide. They do this by recreating the dashboard of a car except with a different steering wheel configuration based on the level of automation that the artifact is supposed to

represent. For example, emotional appeal is used in the car without any self-driving or smart functionalities because it is symbolized through a steering wheel covered in spikes, which invokes fear or danger in the viewer. This is a metaphor for the inconvenience and risk of driving a car. A driver might react negatively to that model since it depicts the danger associated with their actions while a pedestrian might agree more with the message it is conveying. The second model uses crutches to represent the limited self-driving capabilities of assisting the driver in the same way that crutches assist people in walking. The third model uses handcuffs to express how mostly SDVs with limited human interaction imprison the driver because the driver must pay attention to the road even though they have little input into the actual driving of the car. Lastly, the fourth model uses a table to show the luxury and relaxation provided by a hands-free experience, the driver has no obligations to the vehicle and does not need to pay attention to the road.

Additionally, this artifact appeals to the ethos of the audience through the authors' credentials, the first author is a PhD graduate in Production, Management, and Design, with the rest of the authors also having high credentials in engineering or computing-related fields. To add, the authors appeal to the audience by displaying the models at a Dutch road safety research institute along with a digital design agency. The authors got the model out online as well through meeting virtually with a few professionals on the automotive scene, "experts of the mobility sector" (Lupetti et al. 33). This means that they are important to the field that the artifact is targeting, making it more credible.

Also, the artifact appeals to the audience's logical reasoning through the discussion of professionals in the field related to the artifact. They used an online collaborative whiteboard for the first focus group so that it could be done online but the next group was able to physically

experience the artifacts. Their credentials were started in the report along with their reactions, which were then analyzed in a graph of the common arguments made by the focus groups. In other words, the article that goes alongside the artifact contains a logical argument through the reactions of professionals but the actual models themselves contain no visible logos.

Next, artifact two is a summary of a survey called “The Moral Machine” conducted by MIT which tested the morals of people worldwide by asking them to choose the action for a self-driving car to take in a situation with no right answer. For instance, it could ask the user to pick between running over a group of elderly people or killing a car full of fit people by running the SDV into a concrete barricade. Edmond Awad and the other authors point out the effects the survey will have on how we treat SDVs and the public’s shifting opinions on morally ambiguous decisions that an SDV might have to make. They claim that we must all agree and that one person or group should not be left to decide alone. (Awad et al. 3).

Edmond Awad et al appeal to the emotions of the audience to convince them of the importance of discussing SDV ethics. For instance, pathos is used in the sentence “Should [an autonomous vehicle] swerve onto one jaywalking teenager to spare its three elderly passengers?” (Awad et al. 1) This sentence implies a purposeful decision of an SDV to “swerve,” the action of a rapid, unanticipated turn, to hit a “jaywalking teenager” which implies that the illegal action of jaywalking, or crossing a road without the walk signal or a crosswalk, automatically puts less value on that teenager’s life as compared to the life of the passengers in the car. Next, they use more pathos through the statements regarding human history: “Never in the history of humanity have we allowed a machine to autonomously decide who should live and who should die.” (Awad et al. 26) This elaborates on the concepts alluded to in the last example, specifically calling out the decision to end a human’s life and highlighting the fact that SDVs are machines.

Additionally, they use visual effects pathos by using graphs and charts to represent the countries involved in the survey and their responses, displaying the results by country.

On another note, Awad et al utilize ethos through the quotation of Asimov's laws of robotics along with a couple of other sources related to SDV ethics and philosophy. The authors use these to provide credibility to their claims by comparing them to the ethical principles in their sources for example, "[SDV ethics] cannot be solved by any simple normative ethical principles such as Asimov's laws of robotics" (Awad et. al 1). Additionally, the authors themselves appeal to ethos because of their publications and degrees, the first author has a PhD in Interdisciplinary Engineering. This gives the audience trust in their opinions and makes them confident that the information discussed will be informational and free from commercial influences.

Third, Awad et al appeal to the logos of the reader through the logical progression of the article toward their points on SDV ethics, the authors put the audience into a logical path of thinking that leads them to their desired result of exposing the exigence of SDV ethics. An example of this can be found in the statistics that the authors chose to include in the article, "The Moral Machine," a survey composed of pictures that forces the surveyed audience to pick an action for an SDV to take that will ensure the harm or death of a certain demographic. This appeals to the logical reasoning of the audience by showing them direct proof of the claim they are trying to make, "...we need to have a global conversation to express our preferences to the companies that will design moral algorithms, and to the policymakers that will regulate them" (Awad et al. 26). To sum, the logical argument Awad and the other authors make is one in favor of collaboration, they would prefer an outcome where everyone comes together to discuss a solution, over one where a small group of professionals decides everything.

All in all, these two artifacts point out some of the raging issues in SDV ethics in the modern day, level of control in the behavioral and human side of the problem. The first artifact points this problem out by giving metaphors for the amount of human control different levels of SDV provide, such as handcuffs for a high level of automation since it is doing most of the driving for you, leaving you not doing much but forced to be there and be attentive. The second artifact directly shows the behavior issues with SDVs by pointing out the problems with prioritizing one action over another in the model, shocking the audience with bold claims of the death that the decisions could cause. Both approaches support similar claims regarding SDV control with different implementations that make them both unique. Additionally, both artifacts contain strong emotional appeal and credentials to back it up but the first artifact lacks logos in the artifact itself in part due to it being a 3d artwork without any words on it. In conclusion, both artifacts contain strong rhetorical appeals to support their arguments and back themselves up with evidence and ethical appeal with the second artifact having a stronger logical appeal.

Works Cited

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