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AI Moral Decision-Making: Human Control and Culture Impact

TREO Talk Paper

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Abstract

To explore how AI should respond when facing with Trolley problem, a group of MIT researchers conducted the moral machine experiment to explore how people make decisions with different cultural and demographic background when facing with Trolley problem (Awad et al. 2018). Though the experiment provided insights on this dilemma, one important question is still unanswered: *how much control we wish to have when we allow an autonomous AI to handle a situation like Trolley problem?*

This question has important theoretical and empirical implications. It will provide insights on the extent of control we want to share with autonomous AI, perhaps influenced by driver's cultural and demographic background. It will also provide insights to manufacturers of self-driving vehicles in terms of the level of control they want to leave for human drivers. We created a short survey based an adaptation of the Trolley problem scenario to solicit feedback to this question:

1. Should the self-driving car: (a) hit the concrete road barrier (b) hit pedestrians crossing the street (c) randomly pick option a or option b (d) Use the default option of the auto manufacturer
2. Should the self-driving car be allowed to perform random configuration without human driver involvement? (yes) (no)
3. Should human driver have complete control over self-driving car in this or similar moral decision-making scenario? (yes) (no)
4. Should a self-driving car allow a human driver to (a) fully customize moral decision-making configuration or (b) selects a few preconfigured options from the car manufacturer

The survey has been distributed through Amazon MTurk platform to potential subjects in three continents represented by three countries: North America (USA), Asia (India), and Africa (Nigeria). We set an upper limit of 500 subjects from each country and the survey availability duration is 1 week.

We received a total 771 responses with a breakdown as following: 500 from USA, 144 from India, and 127 from Nigeria. The majority of the subjects from US and India are in the age between 25 and 34 and from Nigeria are in the age between 18 and 24. In terms of income, the majority of all three countries considered themselves middle class. The majority of respondents from India are married while from US and Nigeria are single. 92.8% of respondents from US own a car, 84.7% from India, and 51.2% from Nigeria.

A preliminary analysis indicated each country group have distinctive response to above questions. There is possible influence both from national culture and demographics. We are currently working on more extensive analysis to find out how such differences are caused by culture and demographics and whether they are consistent with existing studies.

References

- Awad, E., Dsouza, S., Kim, R., Schulz, J., Henrich, J., Shariff, A., Bonnefon, J.-F., and Rahwan, I. 2018. "The Moral Machine Experiment," *Nature* (563:7729), Nature Publishing Group, pp. 59–64.