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CS 334: Automata and Computation

Reaction to Aldous Huxley's *Brave New World*

Aldous Huxley's *Brave New World* may not be the obvious choice to draw a relation to automata from, however the concepts produced by the novel flow hand in hand with many concepts that have been presented in class. Huxley paints a “technotopia”, that is, a society whose technology has far surpassed anything like what is considered advanced in today's world, in which people are predestined from birth to join a specific caste, and work a specific job. This idea of “pre-destination” is an obvious analogy to the Calvinist religion, among other references to an anti-religion such as using A.F. (after the building of Henry Ford's first model T) to mark years, and making the “sign of the T”, instead of the sign of the cross. The novel follows several characters who challenge the society and concepts that are ingrained into them from “birth” (if it can be called so, as it is far from any physical process that is normal to our own society), and who fail to conform to their predestined roles. This idea of pre-destination is the clearest idea in which we can draw similarities to automatons, in addition to how these dissidents are a cog in the machine. That is, this society, which we will prove is a Turing Machine.

Huxley does an excellent job of informing the reader about the inner workings of his imagined society, and he presents it as a factory tour of the Central London Hatchery and Conditioning Centre. It is here where he presents the idea of a caste system, in which individual babies are grown, one could even say cultivated, to follow a certain preset, which will place them in one of the five castes; the highest being stimulated with knowledge and nutrients, who are meant to be the leaders and scholars of society, to the lowest, who are physically and mentally inhibited, and will become the workers of menial jobs. Those who fail to follow the predefined system are executed, or exiled to a country far away from “normal” society.

My main gripe with the novel is that it ends *shamefully*, in a way in which I would say that Huxley was simply seeking a way to end the story, and had nothing left in his creative mind to deliver a great philosophical or political outcome. Much like other novels of such monumental impacts, the greatness of the work stems from the political and social ideas that are central to the novel, not necessary what happens in the plot. It is in this way in which *Brave New World* is remembered as a wondrous work. Not because of the story, but because of the ideas surrounding the story, the reason the story can even happen. The end of the novel is to me nothing more than using a graphic and violent scene to catch unsuspecting readers off guard, with the hope of them ignoring the lack of resolution due to the sheer shock of the scene.

Overall, the work stands out among the many dystopian science fiction novels because the ideas presented seem to be so applicable and,I begrudgingly admit, practical. While the plot of the novel may drag on at times, and may seem unrelated to the initial in depth description of how the society operates, it does address the main issues of the society, although it fails to solve them or make any distinguishable changes to the way things are done. There is no doubt that the work has secured its place in the history of science fiction, as well as literature in general, and from my reading of the book, I would say it is quite deserving of its place.

This caste system can be represented as either a single automaton, or the union of many separate automatons. Using a single NFA, we can choose a start state that represents the birth of the child, and depending on the caste that is chosen for the child, we provide an input that brings them to that caste (their next state). Now finding a final state for these people proves a little more difficult. Huxley continually brings up the idea of consumerism, and how things such as nature that are free do not encourage the spending of money to help the society. People are taught to dislike these things, and they are replaced with marketable consumerist products, that become ingrained into everything that these people do, such as sports, recreation, and even sex. If we use the idea of consumerism, we can say that regardless of input, people must leave their current state, and proceed to the next state, until they ultimately die as society has instructed them to, an accepting state. Those who stray from the norms of society leave their current state and enter a state that can never reach an accepting state, and will be executed or exiled. For this to be represented as many automatons the same idea can be applied, but splitting up each caste into individual NFA's. Like the world of automatons, the society presented by Huxley has no room for ethics, and discards those who use them to challenge the conventional thought.

If we look closer at the society outlined by Huxley, we see that there are many times in which members of society start to break outside of their predefined roles, and may start to even feel unhappy. The drug “stoma” is introduced, the actual effects of which are not directly addressed in the novel, but it is used incredibly often, and daily by most characters. Stoma is administered to those who start to think about anything other than their predestined job, or those who have thoughts that differ with society. It is used in one situation as a sort of riot control, to calm down a crowd attacking John, one of the main character. It is also taken by many of the characters when they feel stressed out or like they are doing something wrong, or as a aphrodisiac to stimulate encouraged promiscuity. This idea of encouraged promiscuity is very prevalent during a church ceremony, where several doses of stoma are administered to each churchgoer, and an orgy ensues.

If we think of the society as a Turing Machine of sorts, we can check each person of society using the machine and see if the are accepted. The problem being that sometimes patrons will stray away from their “ideal” path, and the machine will break, as they are not going to any predefined state, not even the one of exile and execution. We can think of this like the “sticky” Turing Machine that we discussed, where the solution to the problem is the administration of stoma to get the Turing Machine back on the correct track. After the problem is solved the machine can continue reading as it was before, proceeding until the person is ultimately rejected by society, or dies in their rightful position.

Needless to say, the ideas represented by this society are very compelling, and one could see the merit in a society that replicates the one here. Would there actually be anything wrong with a society that dispels all ideas of unhappiness? One that embraces human nature and sexual desire, and eliminates the physical and natural process of human reproduction, building upon something entirely human controllable. How does this seemingly perfect society present any problems, if it is so clean cut and simple to follow, and can be tailored to build a society that is self reliant. Even the thought that it can be represented so easily with an automaton, seems to prove that this society could work, the only problem being the inputs that are not desired, and the lack of emotion and true passion that would break any automated rules of the society.

The novel is not a very obvious choice to accompany our class of Automata, but nonetheless after analyzing the inner workings of the utopian society presented by Huxley there are many areas in which our studies can be applied. While the pure mathematical aspects of automata may not be directly represented in the work, the theoretical and practical applications make it easy to analyze the book, and learn the ins and outs of the society. Overall it is an excellent pairing with our class, and I would highly recommend it to anyone seeking a novel that will make them think about about where our society lies now, and where we see ourselves going.