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### The Costs of Efficiency

Coming from the perspective of STEM, it is easy to look at society, institutions, and the world and bemoan their inefficiencies. Why should we make decisions so slowly as a society, and accomplish so little toward solving global problems? Meanwhile, engineers, scientists, and mathematicians are working all the time, and succeeding at improving efficiency in their systems. That pursuit of efficiency does come with costs, in simplicity, cost, and flexibility. Likewise, the pursuit of mechanistic efficiency on a societal scale comes with a cost. The stories of “A Brave New World,” “Gattaca,” “1984,” and “Star Trek,” all demonstrate that the cost of efficiency on a societal scale is the destruction of the individual and the loss of meaningful productivity.

In, “A Brave New World,” for instance, men like Helmholtz and Mond possess incredible talents in poetry and physics. Today, they would be invaluable assets to human development. Yet in their world, they receive exile, in the case of Helmholtz, and become stifled in the case of Mond. The world government of the brave new world sought to turn society into a machine capable of meeting all human needs. They succeeded, but only with the assurance that all people became perfectly designed cogs in the machine through genetic engineering. Helmholtz and Mond, despite their potential, did not fit the model (Huxley). They were unique cogs, and unique cogs are defective in an efficient machine. The pursuit of efficiency made their unique talents a threat rather than an asset, as their uniqueness threatened stability.

Similarly in *Gattaca*, society systematically prioritizes efficiency through eugenics, albeit on a less industrial scale. Vincent, an industrious worker, and student, rises to the top of the ladder at the *Gattaca* space center, despite his “invalid,” classification, set to die young from heart failure, barring him from any significant role in society. Though regarded as naturally inferior to his genetically engineered peers from an early age, he becomes the best analyst at the center, proving invaluable in the mission to Titan. A society that prioritized efficiency refused to believe someone not designed for complex scientific work could complete it (*GATTACA*). His individual strength allowed Vincent to make the contributions he made. Had society had its way, his individuality would have disappeared, along with the mission’s success.

1984 brings with it a unique perspective on efficiency. Whereas *Gattaca* and the *Brave New World* focus on engineering humans to be efficient, 1984 focuses on isolation and dehumanization. Oceania criminalized individuality entirely. Those caught in any way acting or thinking against the state are ‘disappeared.’ In such a society it becomes impossible to express one’s individuality, even if it exists. Winston, even with his fragmented memories of the past, and hatred for Big Brother cannot safely express himself or his beliefs to anyone (Orwell). All of society gears itself toward preserving the order of the state, and in the end, nothing moves forward.

The most extreme example of the pursuit of efficiency gone awry is the Borg, the main antagonist of *Star Trek*. The Borg perfected the technology of oppression to such a degree they exist as a collective consciousness, whose only means of advancing scientifically was to genocide, and absorb entire civilizations to add to their own. However, despite the immense power of the collective, the ingenuity and bravery of a few human individuals were enough to destroy their entire empire (Berman). Without the work of individuals, their society could not

adapt fast enough to cope with outside threats and survive. When an urgent crisis, humanity, came to destroy them, they could not adapt.

Between all these stories, two themes remain constant. In every case, the society in question achieves its peak efficiency by destroying human individuality, and in every case, the cost of this is that society ceases to develop and ceases to be meaningfully productive. To the analogy of society being a machine, what good is a machine that can feed every person in the world do if there are not any individuals to feed? There are people to feed, but individuals? In every case, from Brave New World to the Borg, it does not matter if people die if there is no individual meaning attached to those people. With that in mind, why feed them at all? Why should people eat, or live if it is impossible to make any meaningful contributions, to science, or society? If you make the role of the individual to serve society only, and the society has no higher goals than reinforcing itself, what reason is there to live?

In the real world, the purges of the Soviet Union and communist China against scientists and philosophers destroyed some of the most brilliant minds in human history. In Cambodia and Romania, countless millions died because nonconformists threatened the efficiency and stability of society. All these countries fell decades behind their Western counterparts, whether in technology or society. The stifling of individuality led to the stagnation and fall of the Soviet Union, likewise, it is the West's greatest asset. All these stories, like the histories of these countries, are a warning that the pursuit of efficiency more than anything else leads to the destruction of the individual. Without the individual who can look at and fix the machine of society, society inevitably halts. Without the individual, society cannot adapt, and without adaptation, it cannot survive.

Huxley, Aldous. *Brave New World*. New York: HarperPerennial, 1989.

Orwell, George. *1984*. New York: Signet Classics, 1961.

*GATTACA*. Directed and written by Andrew Niccol. Performances by Ethan Hawke, Uma Thurman, Jude Law. Columbia Pictures, 1997.

Berman, R. (Director). (1995, January 16). *Star Trek: Voyager* [TV]. Paramount Pictures.