

Handout: Lecture 1, The Science Behind Science Fiction

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(for an interactive class exercise)

How good is the crystal ball of sci-fi authors? Case in point: an article by the legendary Arthur C Clarke “*The Future Isn’t What It Used to Be*”, from a 1970 Caltech magazine, predicting the future in 2001 (title of his famous movie). Some of his predictions are:

* Two technical developments would make any discussion of the future meaningless: (1) contact with intelligent *extraterrestrials*; (2) development of *ultra-intelligent machines*, probably by 2001.

* The 1890s saw a domestic revolution: piped water, indoor plumbing, gas cooking/heating, electric light, and telephones. The only comparable technological advance in the 1,000 years before was *glass windows*. For the future: (1) home automat in which the month's meals will be delivered, dehydrated like astronaut food; (2) moving away from cows/sheep/pigs as our main protein source; (3) aquaculture of the ocean; (4) bacteria that can process inedible materials (like sawdust, petroleum) into food (already do for cheeses, wines); (5) autonomous, self-contained communities, perhaps a single house, based on closed-cycle ecology of spaceships; (6) communications revolution due to satellites and transistors; paper newspapers nearly extinct; global electronic library; (7) TV grid; 100s of channels; (8) all phone calls billed at a flat rate, or free; (9) direct satellite broadcast to homes (DirecTV).

* the modern USA was created by two inventions: railroad and telegraph; by 2001, the jet plane and comm satellite will replace them;

* future generations will have 3 parents: mom, dad, and the TV;

* work without leaving home; means the city is doomed; cities in 2001 will be like “dinosaurs in their last stage of giantism”;

* population control; but at what level?

* robots at all levels of sophistication; OR biologically engineer much more intelligent animals as our servants;

* home computer like today's furnace system, with a lot of little slave robots to do odd jobs and clean up (Roomba; Amazon just bought it);

* because of vast increase in leisure time, we're heading for “full unemployment”. The second greatest industry will be *entertainment*.

* The greatest single industry of the future is *education*. Abandon the idea that schooling is restricted to youth. HG Wells once said “future history will be a race between education and catastrophe”.

* international bodies (WHO, WMO, InTelSat, UNESCO) will get more and more powerful, more and more international;

Genesis XI, Tower of Babel: “And the Lord said, ‘If as one people speaking the same language they have begun to do this, then nothing they plan to do will be impossible for them.’”