

## Some Sources of the *Generic Four Alternative Images of the Futures of the Manoa School*

Jim Dator  
June 2017

*Many people consider “the future” to be a time and place lying somewhere “ahead” of us towards which we are tending. Some people even seem to assume that “the future” somehow pre-exists, and that we are able, or should be able, to “predict” what it will be like. Our long experience in the futures field has convinced us that it is not possible to predict the future. Rather, it is possible, and necessary, to “forecast” and “experience” logical, theory-based, **images** of “alternative futures”, and to use our analysis of them to envision, invent, and move towards the creation of “preferred futures”, continually re-examining our preferences on the basis of experiences with new and old images of alternative futures.*

*Many years ago, we concluded that all of the millions, indeed billions, of images of the futures that are in people’s minds and actions are specific versions of four generic images of the futures. We eventually labeled them Grow, Collapse/New Beginnings, Discipline and Transform.*

*Below are a few of the very many recent sources underlying each of “the generic four alternative images of the futures of the Manoa School” that are discussed in a Powerpoint presentation at the **Design, Develop, Transform** event, Brussels, Belgium, June 25, 2017.*

*It is very important to understand that the generic four alternative images of the futures of the Manoa School are not “made up”. Rather, each of them is built on a very firm empirical base. That is to say, there are many groups and individuals around the world who hold some version of one of them as an accurate image of The Future—while also usually proclaiming that the other three are wrong. I believe there are strong arguments supporting each of the four generic images, and that it is not possible for me, as a futurist, to say that any one is wrong or right. Rather, it is my duty to present specific versions of each of the four to you as appealingly and accurately as possible so that you may decide how best to envision and create your preferred futures in response to all four of the alternative futures images.*

### Sources for *Grow* Futures

Asafu-Adjaye, John, Linus Blomqvist, Stuart Brand, Barry Brook, Ruth DeFries, Erle Ellis, Christopher Forman, David Keith, Martin Lewis, Mark Lynas, Ted Nordhaus, Roger Pielke, Jr. Rachel Pritzker, Pamela Ronald, Joyashree Roy, Mark Sagoff, Michael Schillenberger, Robert Stone, and Peter Teague. *An Ecomodernist Manifesto*, April 2015. <http://www.ecomodernism.org/>

Bailey, Ronald. *The End of Doom: Environmental Renewal in the Twenty-first Century*. New York: Thomas Dunne Books, 2015.

Brooks, Arthur C. *The Battle: How the Fight between Big Government and Free Enterprise Will Shape America's Future*. New York: Basic Books, 2010.

Colvile, Robert. *The Great Acceleration. How the World is Getting Faster and Faster*. Bloomsbury, 2015.

Cowen, Tyler *Average is Over: Powering America Beyond the Age of the Great Stagnation*. New York: Dutton, 2014.

Diamandis, Peter, and Steven Kotler. *Abundance: The Future is Better Than You Think*. New York: Free Press, 2012.

Diamandis, Peter, and Steven Kotler. *Bold: How to Go Big, Create Wealth, and Impact the World*. New York: Simon & Schuster, 2015.

Ip, Greg. "The World's New Population Time Bomb: Too Few People," *Wall Street Journal*, November 23, 2015. <http://www.wsj.com/articles/how-demographics-rule-the-global-economy-1448203724>.

Land, George. *Grow or Die: The Unifying Principle of Transformation*. Random House, 1986.

Live Science Staff, eds., "Changing Earth: 7 Ideas to Geoengineer Our Planet," *Live Science*, April 18, 2014 <http://www.livescience.com/44960-ideas-to-geoengineer-our-planet.html>

Morton, Oliver. *The Planet Remade: How Geoengineering Could Change the World*. Princeton, N. J.: Princeton University Press, 2015.

Petersen, Rachele, and Peter Wood. *Sustainability: Higher Education's New Fundamentalism*. Washington, D. C.: National Association of Scholars, 2015.

Ridley, Matt. *The Rational Optimist: How Prosperity Evolves*. Harper, 2010.

Simon, Julian. *The Ultimate Resource 2*. Princeton, NJ: Princeton University Press, 1998.

### **Sources for *Collapse/New Beginnings Futures***

Crist, Eileen, Camilo Mora, Robert Engelman, "The interaction of human population, food production, and biodiversity protection", *Science* 356, 260–264 (2017) 21 April 2017.

Dartnell, Lewis. *The Knowledge: How to Rebuild Our World from Scratch*. New York: Barnes and Noble, 2014.

DeFries, Ruth, and Harini Nagendra, “Ecosystem management as a wicked problem”, *Science* 356, 265–270 (2017) 21 April 2017.

Dator, Jim. ‘New Beginnings’ Within a New Normal for the Four Futures.” *Foresight*, 16/6 (November 2014): 496-511.

Joy, Bill. “Why The Future Doesn't Need Us.” *Wired* 8/4 (2000)  
<http://www.wired.com/wired/archive/8.04/joy.html>

Lovelock, James. *The Vanishing Face Of Gaia: A Final Warning*. New York: Basic Books, 2009.

Meadows, Dennis, Jorgen Randers, and Donella Meadows. *Limits to Growth: The 30-Year Update*. White River Junction, VT: Chelsea Green Publishing, 2004.

Rawles, James Wesley. *How to Survive the End of the World as we Know it: Tactics, Techniques, and Technologies for Uncertain Times*. New York: Plume, 2009.

Rees, Martin. *Our Final Hour: A Scientist's Warning: How Terror, Error, and Environmental Disaster Threaten Humankind's Future in this Century--on Earth and Beyond*. New York: Basic Books, 2003.

Sheridan, Sam. *The Disaster Diaries: One Man's Quest to Learn Everything Necessary to Survive the Apocalypse*. New York: Penguin Books, 2014.

Stein, Matthew. *When Technology Fails: A Manual for Self-Reliance and Planetary Survival*. White River Junction, VT: Chelsea Green Publishing, 2008.

Ward, Peter. *The Medea Hypothesis: Is Life on Earth Ultimately Self-Destructive?* Princeton, NJ: Princeton University Press, 2009.

### **Sources for *Discipline Futures***

Alperovitz, Gar, James Speth, Jane Mansbridge, Gerald Hudson, Annie Leonard, Robert Reich, Dean Baker, Barbara Ehrenreich, Jeffrey Sachs, Gerald Torres, Larry Cohen, Julie Matthaei, Leo Gerard, John James Conyers, Jr., Bill McKibben, Saskia Sassen, Frances Fox Piven, Manuel Pastor, J. Phillip Thompson, Oliver Stone, Medea Benjamin, Timothy Wirth, Sarita Gupta, Noam Chomsky, Van Jones, Lawrence Mishel, Roxanne Dunbar-Ortiz, Daniel Ellsberg, Herman Daly, Ralph Nader, Ai-jen Poo, Anna Galland, Danny Glover, Tom Morello, Jill Stein, Nancy Fraser. *The Next System Project: New Political-Economic Possibilities for the 21st Century*, 2015. [thenextsystem.org](http://thenextsystem.org)

Barnosky, Anthony. *Dodging Extinction: Power, Food, Money, and the Future of Life on Earth*. Berkeley: University of California Press, 2014.

Bostrom, Nick and Milan Cirkovic, ed. *Global Catastrophic Risks*. New York: Oxford University Press, 2008.

Brown, James, William Burnside, Ana Davidson, John Delong, William Dunn, Marcus Hamilton, Norman Mercado-Silva, Jeffrey Nekola, Jordan Okie, William Woodruff, and Wenyun Zuo. "Energetic Limits to Economic Growth", *Bioscience* 61/1 (January 2011): 19-26.

Chetty, Raj, David Grusky, Maximilian Hell, Nathaniel Hendren, Robert Manduca, Jimmy Narang. "The fading American dream: Trends in absolute income mobility since 1940", *Science* 356, 398–406 (2017) 28 April 2017.

Dator, Jim and Seongwon Park. "Korea as a Conserver Society." *Social Business* 2/3 (2012): 181-204.

Druker, Steven M. *Altered Genes*. Clear River Press, 2015

Fix, Blair. *Rethinking Economic Growth Theory From a Biophysical Perspective*. New York: Springer 2015.

Floyd, Joshua and Richard Slaughter, ed. "Descent Pathways: Special Issue." *Foresight* 16/6 (2014): 485-495.

Fritz, M., and M. Koch, "Potentials for Prosperity without Growth: Ecological Sustainability, Social Inclusion and the Quality of Life in 38 Countries". *Ecological Economics*, No. 108, (2014): pp. 191-199.

Monbiot, George. *Feral: Rewilding the Land, the Sea, and Human Life*. Chicago: University of Chicago Press, 2014.

Nash, Roderick Frazier. "Island Civilization: A Vision for Human Occupancy of Earth in the Fourth Millennium," *Environmental History* 15 (July 2010): 371–380.

Odum, Howard T. and Elisabeth Odum. *A Prosperous Way Down: Principles and Policies*. Boulder, CO: University Press of Colorado. 2002.

The Pontifical Academy of Sciences and The Pontifical Academy of Social Sciences, ed. *Sustainable Humanity, Sustainable Nature, Our Responsibility, Proceedings of a Workshop*, Vatican City, 2014

[http://www.casinapioiv.va/content/dam/accademia/booklet/booklet\\_sustainable.pdf](http://www.casinapioiv.va/content/dam/accademia/booklet/booklet_sustainable.pdf)

Seddon, Philip J. Christine J. Griffiths, Pritpal S. Soorae, and Doug P. Armstrong. "Reversing Defaunation: Restoring Species in a Changing World." *Science* 345 (2014): 405-412.

Sovacool, Benjamin K., Marilyn A. Brown, and Scott V. Valentine. *Fact and Fiction in Global Energy Policy: 15 Contentious Questions*. Baltimore, MD: Johns Hopkins University Press, 2016.

Steffen, Will, Paul Crutzen, and John McNeill, "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?" *Ambio* 36/8 (2007): 614-621.

Ulvila, Marko, and Jarna Pasanen, eds., *Sustainable Futures: Replacing Growth Imperative and Hierarchies with Sustainable Ways*. Helsinki: Ministry of Foreign Affairs, Finland.

Wittes, Benjamin, and Gabriella Blum, *The Future of Violence: Robots and Germs, Hackers and Drones—Confronting A New Age of Threat* New York: Basic Books, 2015

### **Sources for *Transform Futures***

Aguilar, Wendy, Guillermo Santamaría-Bonfil, Tom Froese, and Carlos Gershenson, "The Past, Present, and Future of Artificial Life," *Frontiers in Robotics and AI*. Review Article, September 17, 2014, pp. 1-26.

Al-Khalili, Jim, and Johnjoe McFadden, *Life on the Edge: The Coming of Age of Quantum Biology*. Bantam Press, 2014.

Anderson, Walter Truett. *To Govern Evolution: Further Adventures of the Political Animal*. Harcourt, 1987.

Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Oxford: Oxford University Press, 2014.

Brain, Marshall. *The Second Intelligent Species: How Humans Will Become as Irrelevant as Cockroaches*. Cary, NC: BYG Publishing, Inc., 2015.

Brynjolfsson, Erik, and Andrew McAfee, *The Second Machine Age: Work, Progress and Prosperity in a Time of Brilliant Technologies*. New York: Norton, 2014.

Church, George M. and Ed Regis, *Regenesis: How Synthetic Biology Will Reinvent Nature and Ourselves*. New York: Basic Books, 2012.

Crutzen, Paul, Will Steffen and John R. McNeill, "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?" *Ambio*. Vol. 36, No. 8, December 2007, 614-621.

Dator, Jim and Yongseok Seo. "Korea as the Wave of a Future: The Emerging Dream Society of Icons and Aesthetic Experience." *Papers of the British Association for Korean Studies* 10 (2005): 1-21.

Dormehl, Luke. *Thinking Machines: The Quest for Artificial Intelligence*. New York: Tarcher Perigee, 2017

- Drexler, K. Eric. *Engines of Creation: The Coming Era of Nanotechnology*. Anchor, 1987.
- Drexler, K. Eric. *Radical Abundance: How A Revolution In Nanotechnology Will Change Civilization*. New York: Public Affairs, 2013.
- Dunagan, Jake. "Neuro-Futures: The Brain, Politics, and Power." *Journal of Futures Studies* 9/2 (2004): 1-18.
- Enriquez, Juan and Steve Gullans. *Evolving Ourselves: How Unnatural Selection and Nonrandom Mutation Are Changing Life on Earth*. New York: Penguin, 2015.
- Finney, Ben, and Eric Jones (eds.), *Interstellar Migration and the Human Experience*. Berkeley: University of California Press, 1985.
- Goonatilake, Susantha. *Merged Evolution: Long-term Implications of Biotechnology & Information Technology*, London: Gordon & Breach, 1999.
- Hanson, Robin, *The Age of Em: Work, Love, and Life when Robots Rule the Earth*. Oxford University Press 2016.
- Harari, Yuval Noah. *Homo Deus: A Brief History of Tomorrow*. New York: HarperCollins, 2017.
- Hughes, James. *Citizen cyborg. Why democratic societies must respond to the redesigned human of the future*. New York: Westview 2004.
- Jensen, Rolf, *The Dream Society: The coming shift from information to imagination*. New York: McGraw-Hill, 1999.
- Kaplan, Jerry. *Humans Need Not Apply: A Guide to Wealth and Work in the Age of Artificial Intelligence*. New Haven, CT: Yale University Press, 2015
- Kurzweil, Ray. *The age of spiritual machines: When computers exceed human intelligence*. New York: Penguin Books, 1999.
- Kurzweil, Ray. *The Singularity is Near: When Humans Transcend Biology*. New York: Viking, 2005.
- McNally, Philip, and Sohail Inayatullah, "The rights of robots," *Futures*, Vol. 20, No. 2, 1988.
- O'Connell, Mark, *To be a Machine*. New York: Doubleday, 2017.
- Paige, Glenn. *Nonkilling Global Political Science*. Honolulu: Center for Global Nonkilling, 2001.

Pickering, Andrew. *The Cybernetic Brain: Sketches of Another Future*. Chicago: University Of Chicago Press, 2010.

Pink, Daniel H. *A whole new mind: Moving from the Information Age to the Conceptual Age*. Riverhead, 2005

Roden, David. *Posthuman Life: Philosophy at the Edge of the Human*. New York: Routledge, 2015.

Sole, Ricard. "Bioengineering the Biosphere?" <http://arxiv.org/abs/1410.8708>, 2014

Steffen, Will, Wendy Broadgate, Lisa Deutsch, Owen Gaffney and Cornelia Ludwig, "The Trajectory of the Anthropocene: The Great Acceleration" *The Anthropocene Review* 2/1 (April 2015):1-18. doi: 10.1177/2053019614564785

Voros, Joseph. "Galactic-scale macro-engineering: Looking for signs of other intelligent species, as an exercise in hope for our own," in Leonid Grinin, David Baker, Esther Quaedackers, and Andrey Korotayev, eds., *Teaching and Researching Big History: Exploring a New Scholarly Field*. Moscow: Uchitel, 2014, pp. 283-304.

Wittes, Benjamin, and Jane Chong, *Our Cyborg Future: Law and Policy Implications*. Washington, DC: Brookings, 2014.

Wolfe, Cary. *What is Posthumanism?* Minneapolis: University of Minnesota Press, 2010

### **Some Basic Sources About Futures Studies (and the Manoa School)**

Dator, Jim. "Alternative futures at the Manoa School" *Journal of Futures Studies*, Vol. 14. No. 2, November 2009, 1-18.

Dator, Jim. "Futures Studies," in William Sims Bainbridge, ed., *Leadership in Science and Technology*. Thousand Oaks, California: Sage Reference Series, 2011, Vol. 1, Chapter Four, pp. 32-40.

Gidley, Jennifer M. *The Future: A very short introduction*. Oxford, UK: Oxford University Press, 2017.

Lum, Richard A. K. *4 Steps to the Future*. Honolulu, HI: FutureScribe, 2016

Schultz, Wendy L. "A Brief History of Futures", *World Futures Review*. Volume 7 Number 4 Winter 2015, 324-331.