

CRADLE TO CRADLE

If you're one of those who like to imagine elegant solutions to the world's ills, especially when they transcend or obliterate old dichotomies, you'll love William McDonough and Michael Braungart's *Cradle to Cradle: Remaking the Way We Make Things* (207pp, North Point Press, 2002).

Architect McDonough and chemist Braungart envision a world where we've eliminated the concept of waste, where garbage becomes "food" and sewage becomes drinking water, where we use technological materials over and over, endlessly, and regulatory agencies are fading memories -- a world that celebrates abundant diversity, with nothing lost.

We live in a closed system, consisting of mass (the Earth) and energy (the sun). Nothing enters or exits this system except heat and the occasional meteorite. So you can't throw anything away because there is no away. On Earth we're all downstream.

Currently in the U.S. more than 90% of extracted materials used to make durable goods become waste almost immediately. A study of household contaminants showed concentrations of cancer-causing chemicals greater than in a superfund site. One product the authors tested had "138 known or suspected hazardous ingredients."

These contribute to "intergenerational remote tyranny" -- visiting the sins of the fathers on the heads of the children. But what if children's health and prosperity, now and in the future, were the standard for all our activities?

Current solutions are often negative. Imagine telling your dinner guests, "The food you're about to eat contains no

arsenic.” Industry and the environment are cast as irreconcilable antagonists. “Eco-efficiency” – adding value to a good or service using fewer resources and creating less pollution – may result in a slow death for nature, since even tiny amounts of pollution can be devastating over time.

Too often environmentalists tell us what not to do – minimize, avoid, reduce, sacrifice. The authors want positive solutions. We have regulations, but “ultimately a regulation is a signal of a design failure.” Industry could be so safe, effective, enriching and intelligent that we need not fence it off from other human activities.

Let’s have disassembly, as well as assembly plants. Let’s design products with composting and reincarnation in mind, so they’re positives for both biological and technical metabolisms.

The world evolved by creating diverse and abundant ways to capture the sun’s energy – an energy thousands of times greater than our needs. So let’s try to see every being, including industries, connected to and contributing to the whole in positive ways, beginning with a connection to local material and energy flows, customs, needs and tastes.

To guide us, the authors present a triangular “fractal” – a figure whose parts are identical versions of each other – with ecology (sustainability), equity (human fairness) and economics (profit) at the apices – and invite us to consider all three equally at the outset of any project.

Does this sound utopian? Their examples don’t – buildings cooled and heated with pressure, that invite exchanges with nature, ancient wind towers that air condition without power input, small efficient windmills, less damaging to wildlife, dish soap shipped as pellets

(liquid is available locally). They describe edible fabrics, “nutrivehicles” that store water and CO₂, with tires that capture harmful particles. Or how about \$35 million saved by Ford in stormwater treatment using grass-covered roofs, wetlands and swales, or packaging designed to last the product’s lifetime, but no longer?

Instead of selling products outright, try “products of service” – buyers keep products for a defined use period, then return them to the manufacturer, who still owns the raw materials, and can thus make them over again – no waste, great savings, and less extraction of raw materials.

Evolve products until they nourish, that are a pleasure to use and discard, so we can leave an ecological footprint to delight in, not lament.