

Aaron Avenido, aged 16, The Illawarra Grammar School, Wollongong, NSW

You are what you eat: consumerism and contamination

“You are what you eat.” It is a phrase that is as much of a friendly insult as it is a warning against poor dietary choices. Within the last twenty years, this overarching adage has created a paradigm shift in the minds of consumers throughout the world, elucidating the need for the pervasion of more health conscious lifestyles and dietary choices. The supposed “war on fats” during the 1960s and 1970s in the West, in conjunction with our current “war on sugars”, is strong testament to the public’s changing consumer habits (Leslie, 2016). Nonetheless, this obsession with the nutritional content of our food often overshadows a far more disconcerting dilemma: the intrinsic relationship between consumerism and chemical contamination.

Modern consumerism has catalyzed a dangerous incentive for corporations to prioritize monetary yield above public safety. Since 1970, the global population has more than doubled to 7.73 billion people (Worldometers, 2019), and therefore now exists a strong demand for cheap, mass-produced agricultural products. One of the methods of achieving such a steady supply chain is through the use of pesticides, in order to protect plants and crops from biological factors that would otherwise lead to decreased, inconsistent yield. The issue therefore arises in the form of pesticide residue leftover on the surface exterior of foods, which easily pervade themselves onto supermarket shelves. Dioxins, for instance, are a type of persistent organic pollutant that forms the basis of many common industrial herbicides, as well as its emission from waste incineration (World Health Organization, 2016). If chronically ingested as residue, dioxins are known to be carcinogenic and have been demonstrated to induce a myriad of diseases—porphyria, infertility, ischemic heart disease, chloracne, endometriosis, and cancers such as non-Hodgkin’s lymphoma (White and Birnbaum, 2010). And to think, a substance once used as chemical warfare during the Vietnam War is now hastening its way to our dinner plates and digestive systems: that is an egregious price for consumerism, yet one that guarantees affordability and accessibility to billions of people.

Aside from the use of pesticide in farms, contaminants also pervade themselves via accumulation within the environment. It is no secret that rapid industrialization has resulted in a state of global ecological crisis, namely due to the sheer volume of pollutants released from coal-powered factories each day. Of these pollutants, heavy metals pose an inherently dangerous risk to the public, due to their ability to be transported between organisms in a process known as bioaccumulation. Mercury and arsenic, for instance, are generally absorbed in the ocean via algae and marine fauna, and eventually accumulate in the tissues of larger fish that are caught in wild fisheries, with each successive

trophic level amassing ten-fold the amount of metal than previous (CrashCourse, 2012). Severe exposure to both mercury and arsenic are known to be lethal in humans, and cause Chisso-Minamata disease, cardiomyopathy, pulmonary edema, and renal failure (Genetic and Rare Diseases Information Center, n.d.). Therefore, the phrase “shop until you drop”—to drive the economic output of factories, and by association, pollutants—becomes much less a mantra for free-spirited consumerism than it is a forthcoming obituary. If we think that corporations and governments are solely responsible for perpetuating food contamination, we are outright fooling ourselves; the existing, heavily polluted yet pragmatic, means of production are inherently a reflection of consumer demand.

Applying this principle more overtly to the supermarket, corporations regularly prey on consumer demand for the most nutritious food products available. As aforementioned, the concurrent “wars on fats and sugars” were birthed from paradigm shifts that resulted in the public antagonism and paranoia of foods with high concentrations of fats and sugars. Resultantly, one of the by-products of this immense shift in consumer demand was the saturation of high-protein, high-vitamin foods to the market, thereby appealing to a more health conscious public. No example is perhaps more poignant than the infamous Chinese milk scandal of 2008, which revealed the widespread adulteration of melamine into infant formula and other milk-related products. When added to foods, melamine provides the false impression that protein content is greater than actuality when tested by government agencies, and hence, misleading consumers via fraudulent marketing (World Health Organization, n.d.). Resultantly, it was estimated that more than 300,000 individuals were victims of the chemical, of which 54,000 babies were hospitalized due to renal damage and kidney stones, whilst a further six were killed due to renal failure (Huang, 2018). The effects of this scandal were monumental, and illustrated that the most vulnerable members of our society can become victims of chemical contaminants and consumer demand; and much like an oxidative-reduction reaction, it appears that neither contamination nor consumerism can occur without the other.

Therefore, it is evident that a change in consumer behavior will likewise result in a change in corporate culture and the means of production. In recent years, the resurgence of counterculture industries, such as organic farming and veganism, have paved the way for a forthcoming paradigm shift: one wherein a “war on chemicals” will shed new light as to the humanitarian and ecological travesties of chemical contaminants and pollutants. Corporations appear to have followed the same foresight as consumers; in the United States alone, the sales of certified organic products have more than doubled to \$47.8 billion from 2010-18 (Gelski, 2019), whereas closer to home, the Woolworths Group have recently launched a \$30 million fund to help domestic farmers produce more organic foods (Woolworths Group, 2018). With the increasing adoption and popularity of this food submarket, it can therefore be hoped that the intrinsic relationship between consumerism and chemical contamination will be significantly reduced or severed.

It is now paramount more than ever that we reflect on our role as consumers and the economic leverage we possess to enact genuine change towards the existing, heavily polluted means of production. Therefore, the question remains: are we to become a lax society that is simply what it eats, or are we intuitively greater than that? Of course, the choice is yours; you are the consumer.

Reference List:

\$30 million fund launched by Woolworths to help Aussie farmers meet the growing customer demand for organic fruit and vegetables 2018, Woolworths Group, viewed 22 August 2019, <https://www.woolworthsgroup.com.au/page/media/Latest_News/30million-fund-launched-by-woolworths-to-help-aussie-farmers-meet-the-growing-customer-demand-for-organic-fruit-and-vegetables>.

CrashCourse 2012, *Ecosystem Ecology: Links in the Chain - Crash Course Ecology #7*, online video, 19 December, viewed 22 August 2019, <<https://www.youtube.com/watch?v=v6ubvEJ3KGM>>.

Current World Population 2019, Worldometers, viewed 22 August 2019, <<https://www.worldometers.info/world-population/>>.

Dioxins and their effects on human health 2016, World Health Organization, viewed 22 August 2019, <<https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>>.

Gelski, J 2019, *U.S. annual organic food sales near \$48 billion*, Food Business News, viewed 22 August 2019, <<https://www.foodbusinessnews.net/articles/13805-us-organic-food-sales-near-48-billion>>.

Heavy metal poisoning n.d., Genetic and Rare Diseases Information Center, viewed 22 August 2019, <<https://rarediseases.info.nih.gov/diseases/6577/heavy-metal-poisoning>>.

Huang, E 2018, *Ten years after China's infant milk tragedy, parents still won't trust their babies to local formula*, Quartz, viewed 22 August 2019, <<https://qz.com/1323471/ten-years-after-chinas-melamine-laced-infant-milk-tragedy-deep-distrust-remains/>>.

Leslie, I 2016, *The sugar conspiracy*, The Guardian, viewed 22 August 2019, <<https://www.theguardian.com/society/2016/apr/07/the-sugar-conspiracy-robert-lustig-john-yudkin>>.

Questions and Answers on melamine n.d., World Health Organization, viewed 22 August 2019, <<https://www.who.int/csr/media/faq/QAmelamine/en/>>.

White, S & Birnbaum, L 2010, *An Overview of the Effects of Dioxins and Dioxin-like Compounds on Vertebrates, as Documented in Human and Ecological Epidemiology*, Journal of Environmental Science and Health Part C, viewed 22 August 2019, <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2788749/>>.