5. Becoming Plastic, Transforming Justice

Willis Jenkins

In early Christian thought, the word "plastic" often referred to the human being. From the Greek verb *plassō* for molding and making, emerged a word for the quality of being able to be molded: *plastikos*—the quality of being formable by the intent of another. In Romans 9:20, Paul works with root words of *plassō* to describe the human being as *to plasma,* the one formed, in relation to God, the one who forms us. Theologians like Irenaeus (born in 130) and Gregory of Nyssa (†394) used the term to describe human transformability. Being plastic, in that sense, was a central characteristic of being human, a sense that continued through Romanticism, as in the phrase "the one Spirit's plastic stress" of Percy Bysshe Shelley (1792–1822) in his poem "Adonais," which influences words of Gerard Manley Hopkins (1844–1899) "instress" and "inscape" to explore how God works on humans through created beauty.[1] In other words, from the New Testament into the nineteenth century, a primary referent for "plastic" in Christian theology was the human interior, transformable before the creativity of God.

After the twentieth century the word now means nearly the reverse: a human product whose quality is its moldability to our will. And, in tragic irony, this substance made by human transformative powers has become name of a scourge, a pervasive blight that itself seems to be altering lifeworlds, to the extent that some suggest plastic will become the signature geological evidence of an epoch of irresponsible anthropogenic influence: the plasticene.[2] It has become a name for the Anthropocene because plastic

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[1] See W.H. Gardner's introduction to Gerard Manley Hopkins, *Poems and Prose* (Penguin Classics, 1985), xx–xxv.

[2] See Christina Reed, "Dawn of the Plasticene Age," *New Scientist* 225, no. 3006 (2015): 28–32.

exemplifies its paradoxes: a planet remade by powerful humans in their own image becomes, by the substance of those very powers, increasingly inhospitable to them.

As with other drivers of adverse planetary changes, some resistance to interventions may be rooted in a sense that technological societies cannot change, that plastics are more or less inevitable because the human drive for material progress and expansion of power is fixed in human nature. Sometimes that sense of inevitability is glossed with the view that good societies accept such negative trade-offs from a fundamental commitment to freedom, which over the long run increases human welfare. That the vulnerable disproportionately bear the burden of those trade-offs may be seen as unfortunate but acceptable for building wealth and power for humanity. Necessary to the work of building responsibilities for plastic pollution, climate disruption, and species extinctions is countering that combination of technological fatalism, free market fundamentalism, and indifference to justice by recovering the view that humans can be transformed.

Perhaps an indication of the depth of our troubles, moral and cultural transformation has emerged as a theme in global institutions tracking planetary problems. The Intergovernmental Panel on Climate Change (IPCC) now goes beyond its previous calls for transitions in material systems to summon "long-term transformation" in social systems "including altered goals or values."[3] In its most recent assessment report Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES) calls for "transformative change" across sectors, which it specifies as "fundamental, system-wide reorganization across technological, economic and social factors, *including paradigms, goals, and values*."[4] While seemingly naïve to the brittle fixities of modern assumptions about human

[3] Intergovernmental Panel on Climate Change (IPCC), Working Group II, *Climate Change 2022: Impacts, Adaptation, and Vulnerability* (2022), www.ipcc.ch/report/ar6/wg2/.

[4] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), "Summary for Policymakers," *Global Assessment Report on Biodiversity and Ecosystem Services* (2019), www.ipbes.net/global-assessment. Italic in original.

nature and economic organization, that transformability of values is something to which Christian theology has long attested: we are actually made for great transitions.

The early Christian uses of plasticity hold out hope that our values, practices, institutions, traditions, and maybe even our senses of what it is to be human can be remolded. Human transformability was an important condition for thinking about faithfulness, which included entrusting oneself to be molded by God into responsibility for all one's relations. So one pattern of answer to the problem of pervasive plastics pollution is that we must, in a sense, become more plastic.

Six Ways to Make Polymers into Problems

Central to the work of transition is making everyday materials into moral problems. How does a mundane, throw-away substance become a moral problem? When challenges involve relations unfamiliar to the inheritances by which people make sense of their world, or which seem outside the repertoire of virtues and obligations through which a tradition forms persons, then a key task for ethics is to extend interpretive and practical competencies.[5] For example, until the mid-twentieth century, the atmosphere was not usually a domain of moral responsibility and fossil fuel energy was benignly irrelevant to ethics. With the ebullition of anthropogenic climate change, a major project for ethics within and across moral worlds focuses on catalyzing processes by which previously benign substances and planetary relations become significant for how people and institutions understand their responsibilities and perhaps their sense of personhood.

I here sketch six approaches for turning polymers and their impacts into redressable moral problems. Each of the six may be assessed for their adequacy to the challenge, yet it is important to note that their liabilities

[5] See Willis Jenkins, *The Future of Ethics: Sustainability, Social Justice, and Religious Creativity* (Georgetown University Press, 2013).

and affordances differ within specific moral, religious, or political worlds where they catalyze responsibility. In some cases, preference for a specific approach to problematizing may be preferred by the moral world in which it has the most purchase. Each also leads to a different view of the tradeoffs involved. While the focus of assessment will be on an approach's potential to mitigate the manifold harms of global plastics pollution as summarized in the 2023 Minderoo-Monaco Commission on Plastics and Human Health, I take as a given that plastics are pervasive in part because they are convenient and efficient, associated with many quality of life improvements expanded to more of the human family than ever before. As just one example, the Minderoo-Monaco Report notes the role of disposable plastics in medical contexts for the control of infection. In that and other cases, substitutions are not always easy and may carry trade-offs that have their own impacts on distributive justice or care for the vulnerable.[6]

1. *Trash Containment*

Polymers may first attract notice as a problem of mismanaged trash, disturbing because of their pervasiveness and ugliness. Strewn on roadsides, lining riverbanks, mixed into agricultural fields, washing up on beaches, caught in the stomachs of marine animals—plastics constantly frustrate waste management strategies. Like "dirt" in Mary Douglas's account, "trash" is a social category, referring to matter that belongs in socially-approved disposal flows and seems threatening when encountered outside of them.[7] At low levels, the threat of mismanaged matter may be experienced as merely annoying but at high levels may be perceived as a threat to social organization or a sign of social disintegration, perhaps

[6] See Philip J. Landrigan, Hervé Raps, Maureen Cropper, Caroline Bald, Manuel Brunner, Elvia Maya Canonizado, et al., "The Minderoo-Monaco Commission on Plastics and Human Health," *Annals of Global Health* 89, no. 1 (2023): 1–215.

[7] See Mary Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (Routledge, 1967).

because the category of trash, which contains disused matter, is overwhelmed by plastics, which seem uncontainable. Affective recoil from a trashscape can thus drive critical questions about what has gone wrong in social organization and what must change.

However, framing plastic pollution as a waste management problem can yield weak solutions and may be given to prejudice. It is weak when this framing suggests that the solution is not to have fewer or safer polymers enter global productions, but rather that what is needed is stronger containment of them at local levels. That perception can, in turn, feed prejudice by lending itself to judgement about the kinds of communities who have trouble managing their waste, and so to the long histories of in-group perceptions that their practices are cleaner than those of outsiders. Producers will generally welcome the release of responsibility in interpretations that move in this direction, as for example in scientific papers that track flows of plastic trash and find that they come disproportionately from certain demographics, or a particular region, or from poorer countries.[8] Socially-shaped perception of uncontained trash, in other words, may unfairly channel blame toward local failures of containment rather than Global North negligence in production.

On the other hand, aesthetic response to trash can point attention to human rights implications of locally mismanaged plastic waste. Inadequate waste management is often paired with and exacerbated by inadequate access to water and sanitation. When people do not have access to clean water, they may buy water in plastic bags;[9] when they do not have access to latrines they may use plastic bags; and without waste management, the disposed bags clog public drains and sewers, further degrading the habitability of a place. Plastic trash becomes a landscape of human degradation; in some places it becomes the ever-present medium of social and ecological relations for embodied human persons. In smoking

[8] See Jenna R. Jambeck, Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, et al., "Plastic Waste Inputs from Land into the Ocean," *Science* 347, no. 6223 (2015): 768–771.

[9] See Adetoun Mustapha Olaitan's chapter in this volume.

mountains of plastic waste worked globally by millions of people sustaining themselves as trash-pickers, uncontained plastics significantly determine the world available to human residents.

2. *Bodily Contamination*

A second approach to making plastics into a moral problem focuses on violation of the sanctity of one's body. This approach is akin to the trash perception but is here intensified in relation to the special status of human bodies. The Minderoo-Monaco Report summarizes findings about the plastics increasingly found inside humans, as small particles enter through ingestion, inhalation, or absorption. They may pass through but sometimes travel within us, sometimes crossing into organs or circulating in blood. Even if the health impacts are uncertain, many people may feel repugnance or anger at unlicensed trespass of their body.

Sanctity violated or purity tainted can link to powerful moral responses. Jonathan Haidt argues that they matter especially to conservative moral systems.[10] While Haidt holds that such systems tend not to weigh harm and fairness as heavily as liberal frameworks, leading to relatively less concern regarding distributional harms of plastic trash, conservatives' emphasis on bodily purity and disgust at contamination may make them more likely to be outraged or frightened by discoveries of manufactured substances mixed into their blood.

A drawback to this approach for plastics lies in its susceptibility to being overwhelmed by their pervasive unavoidability. As Alexis Shotwell notes, like other Anthropocene problems, the overwhelm can generate a "purity politics of despair"; if the moral problem arises from obligations to separate oneself from unavoidably entangling relations, the result will quickly transition from outrage to resignation.[11] Plastic is everywhere and

[10] See Jonathan Haidt, *The Righteous Mind: Why Good People Are Divided by Politics and Religion* (Pantheon Books, 2012).

[11] Alexis Shotwell, *Against Purity: Living Ethically in Compromised Times* (University of Minnesota Press, 2016), 195.

will be for as long as we here are alive. Rather than despair at the impossibility of avoiding a monstrous substance, we need ways to develop collective responsibility for the mixed worlds we are making, to develop meaningful freedom with plastics.

3. *Violence and Injury*

The next three approaches correspond to harms described by the Minderoo-Monaco Report: plastics are injuring and killing humans; those already vulnerable are disproportionately exposed; and plastics are killing other creatures and damaging lifeworlds on which all of us depend. Much of the moral work here is accomplished by sheer description. Taking in the cumulative record of science-based research on the harms caused by plastics, one cannot but conclude that there are violations of human dignity and creaturely integrity, so I will briefly underscore three key findings related to injustice, before extending the scope of justice involved.

On the first major form of harm, the Minderoo-Monaco Report is unequivocal: "Plastic is responsible for [human] disease, disability, and premature death at every stage of its lifecycle."[12] From water pollution in extraction to airborne microfibers in manufacture to neurotoxin exposures in everyday use to carcinogens produced in waste management, a mass of evidence shows plastics harming human. Are those individual harms worth the aggregate benefits they produce? The cumulative cost of the health impacts in 2015 in the United States alone, including 91,000 premature deaths, the report estimates at $921 billion, or about five per cent of gross domestic product (GDP)—a figure that does not include the health impacts associated with related climate impacts. If we take the costs as an indicator of magnitude, it is not hard to conclude that we are all bearing avoidable harms created by an industrial process with insufficient guardrails and safety protocols.

[12] Landrigan, et al., "The Minderoo-Monaco Commission," 6.

4. *Distributive Injustice*

We are not all bearing those harms equally, however. That children are especially vulnerable points to a second dimension of justice: plastic harms disproportionately affect those already vulnerable. The Minderoo-Monaco Report documents how those harms follow and intensify historic injustices: "health consequences fall disproportionately on the poor, minorities, the marginalized and people in the Global South."[13] From fenceline neighborhoods near production facilities, to the dangerous packaging for inexpensive goods needed in poorer communities, to the burdens of waste and pollution, negative consequences of plastic are pushed by social power into the backyards and bodies of the disempowered. In other words, the affluent take advantage of inequalities to ensure that the greater burden of harms fall on those minoritized, impoverished, or otherwise excluded. That is in itself an injustice.

Repair requires redressing aspects of procedural injustice, which begins with adequate stakeholder participation in decision-making processes. That includes a right to meaningful information about risks and benefits, which entails a right to intelligible science linked to the best available knowledge about health outcomes. Procedural justice is relevant at every scale in which the problem is experienced, so while it includes stakeholder participation in decisions about where to locate production and waste facilities, it goes beyond that to democratize deliberations over how much and what kinds of plastic production make sense. And because unjust distribution of harms from plastics follows global inequalities, especially in the flow of waste from Global North to Global South, procedural justice requires representation from all the relations involved in the plastic lifecycle.

Procedural justice in implementing policy change is also critical because, as the history of environmental justice movements attests, the burden of environmental intervention also tends to be born more heavily

[13] Landrigan, et al., "The Minderoo-Monaco Commission," 103.

by the vulnerable. Plastics are associated with many quality-of-life improvements that matter especially to the vulnerable, like transporting potable water where it is unavailable or the role of disposable plastics in medical contexts for the control of infection. In these and other cases, substitutions are not always easy and may carry trade-offs that have their own impacts on distributive justice or care for the vulnerable. Just as burdens of the problem fall more heavily on the vulnerable, so can policy interventions if not designed with their interests and voices. Governance processes will be more fair when weighted so that there is more voice and priority for those populations most impacted by plastics.

5. *Multispecies Injustice*

A harm-focused approach to making plastics into a moral problem involves non-human creatures and living systems. Of course, many of these harms also indirectly affect human health and so would be mitigated by better human public health protections, but there is another, distinct kind of justice issue here. Insofar as coral reefs or marine mammals have their own integrity or dignity or value or right—to use four terms offered by Pope Francis over recent years—then avoidable harm to other creatures and their worlds is its own injustice. The Minderoo-Monaco Report reviews the state of scientific knowledge on vulnerabilities to non-human animals and living systems, about which there are many uncertainties and gaps in knowledge. Yet enough is known for a global treaty to recognize three distinct levels of injustice.

The first is negligent injury to other individual organisms, as in the entanglement of sea turtles in plastic lines or ingestion of plastics as mistaken food. The second is extinction pressure on species and communities, as in the additional stress microplastics seem to create for coral reefs, already under pressure from warming waters, or correlations of plastic ingestion with failed seabird nests. Because extinction shuts down evolutionary possibilities of adaptation it might also be considered a kind of procedural injustice, excluding more-than-human forms of responsibility

for a world with plastics. Finally, there is the issue of disrespectful relations with fellow creatures; whatever the impacts, the relations themselves are characterized by absence of moral recognition, which is itself an injustice. For example, releasing toxic materials that in appearance, smell, or chemical signature present as food to other animals seems disrespectful as an act.

6. *Colonial Injustice, Integrative Repair*

The previous three harm-focused approaches to making polymers into problems overlap but they do not always integrate. The different kinds and lenses of justice they involve seem different. Concern to protect my own body from toxic trespass may lead to policy interventions with consequences disproportionately borne by the vulnerable; meanwhile, prioritizing the human vulnerable might require sacrificing regard for non-humans. These different lenses of justice, when overlaid, may seem to blur our moral vision.

Consider anew the example of plastics that look like food to other creatures to illustrate how harms to non-human creatures may connect to structures of violence and injustice to other humans. Non-compostable materials are disrespectful because they cannot feed other creatures. In the case of a single-use disposable straw the temporalities are especially mismatched: a ten-second use of a material with a thousand-year life. That kind of plastic use carries a colonial premise: that land and water can be used to store the long-term consequences of societies built to support pursuit of short-term interest.

On this approach, confronting plastics pollution is an opportunity to confront colonial premises and repair divided senses of justice—including the idea that land exists for human benefit and that "human benefit" is determined by the perceived needs of dominant societies. In the book *Pollution as Colonialism*, plastics researcher Max Liboiron argues that the conventional model for assessing pollution "is based on land relations that strip away the complexities of Land—including relations to fish, spirits,

humans, water, and other entities—in favor of elements relevant to settler and colonial goals for using the water as a sink, a site of storage for waste."[14]

The pursuit of human benefit has often justified colonial forms of extraction, production, and waste, with the (sometimes silent, sometimes explicit) view that not all humans are included in the humanity who benefits. When adverse outcomes—like climate disruption or plastics pollution—are treated as contemporary pan-human imperatives to avoid looming catastrophes of the future, it can de-historicize them, deflecting attention away from the histories of injustice from which they are produced.[15] Separated from their histories, the different trajectories of injustice seem separate and rivalrous. Just so, making plastics a problem of colonial injustice may reintegrate accounts of justice. Liboiron writes, "Plastics are an ideal pollutant to upset dominant norms of pollution [because]... their industrial, intergenerational, and ubiquitous relations make a lot of room for understanding and doing things differently."[16]

Procedural justice offers a way to start that work of reintegrating and repairing. In a review of published work on plastics, Liboiron and Cotter find that "sources authored by Indigenous individuals or organizations were more likely to directly oppose colonial systems of pollution in favor of rights- and justice-based modes of governance."[17] For another example, the involvement of waste pickers as knowledge holders has expanded the ambitions of justice in the effort toward a UN treaty on plastics.[18] So, while

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[14] Max Liboiron, *Pollution Is Colonialism* (Duke University Press, 2021), 40.

[15] See Nelly Wamaitha, "The False Promise of Progress," *Journal of the Society of Christian Ethics* 41, no. 2 (2021): 297–314.

[16] Liboiron, *Pollution Is Colonialism,* 101.

[17] Max Liboiron and Riley Cotter, "Review of Participation of Indigenous Peoples in Plastics Pollution Governance," *Cambridge Prisms: Plastics* 1 (2023): e16, 1–16, doi.org/10.1017/plc.2023.16.

[18] See Patrick O'Hare and Emmy Nøklebye, "'The Human Face of the UN Plastics Treaty'? The Role of Waste Pickers in Intergovernmental Negotiations to End Plastic Pollution and Ensure a Just Transition," *Cambridge Prisms: Plastics* 2 (2024): e12, 1–12, doi.org/10.1017/plc.2024.12. In this volume, see also Adetoun Mustapha Olaitan's chapter.

divisions in inherited ideas of justice may be under pressure from the scale and complexity of relations involved with plastics, combined with inequality among humans, there is evidence that democratizing deliberation expands the range of what justice can do. Especially when it reckons with an inherited world shaped by colonialism, reparative justice may become more integrative and ambitious. Thus, Olufemi Taiwo writes: "If slavery and colonialism built the world and its current basic scheme of social injustice, the proper task of social justice is no smaller: it is, quite literally, to remake the world."[19]

Conclusion: Five Tactics

Olúfẹ́mi O. Táíwò observes that worldmaking does not need a comprehensive plan to get started; transformative responsibilities are more likely to develop from pluralist experimentation with multiple tactics. We do not need a comprehensive solution so much as to see truthfully what we inherit and invent ways to reshape those inheritances and what they have made of us.[20] The following five tactics represent ways to exercise plasticity: the capacity for humans and their social forms to reshape themselves in response to challenges.

Cap Production

An important condition for repair and transformation is time. Plastics have been under commercial production just a bit longer than the average lifespan of an albatross, about as long as a human life, since about the signing of the 1948 "Universal Declaration of Human Rights."[21] It makes sense, then, that ecological and cultural systems would find it difficult to

[19] Olúfẹ́mi O. Táíwò, *Reconsidering Reparations* (Oxford University Press, 2022), 67.
[20] See Táíwò, *Reconsidering Reparations*, chapters 5–6.
[21] See United Nations, "Universal Declaration of Human Rights" (1948), www.un.org/en/about-us/universal-declaration-of-human-rights.

adapt quickly enough. But that can also be reason for hope: slow down production to give cultural and ecological systems time to make sense of this transforming substance, to accommodate it. A global treaty capping production is not simply about slowing a waste stream; it is about expanding time for all creatures to understand and accommodate plastic ways of being. Caps should thus focus on the most dangerous polymers devoted to the most transient uses.

Inclusive Science

A global treaty should authorize ongoing science-based work to establish thresholds for minimum protection of rights to a reasonably safe environment, beginning with the air we breathe and water we drink, benchmarked from humans who are most vulnerable. That will require ongoing evidence-based research which itself will require more transparent disclosure and public sharing of information, which is key for making our moral tools, from purity to welfarism to rights, more competent to plastics. At the same time, a permanent scientific consultative body will be more representative and effective if includes ways of knowing investigated in humanities and social sciences—something the IPCC and IPBES discovered late and have in recent year been working to incorporate. That includes work from Indigenous knowledge, religious traditions, ethical frameworks, and/or cultural values. Plastics science should be a democratizing practice in itself, something to which many can contribute, including through community-led approaches. There is an element of epistemic justice here, and it also may be tactically advantageous for a diversified, inclusive, pluralist approach to making expert knowledge.

Extended Producer Responsibility

By treaty, policy, or tort, we must create ways to hold plastics producers legally and financially responsible for the safety of their products over their full lifecycle. That would shift responsibility for safety and pollution

management from governments and individuals wrestling with this uncontainable substance imposed into our common life, to the institutions who make them. A polluter-pays model would incentivize safer manufacturing processes, more prudent quantities, more innovative development to meet related needs, and investment in adequate waste systems everywhere the product goes. Where policy fails, litigation might establish criminal negligence or public nuisance. Where there is evidence that specific producers had knowledge that their products cause harm and that it could not be contained by existing waste management (as California has accused Exxon),[22] producer responsibility extends to the costs of intentionally frustrating the cultural and political processes through which societies develop responsibilities for new problems. That is an injustice in itself and one for which companies involved owe reparations, which should not only be monetary damages but apology and truth-telling.

Rights of Rivers and Oceans

Rights for nature are recognized in a number of jurisdictions, often due to successful political and legal strategies from Indigenous Peoples organizations. They have been especially successful in regard to rivers, which ostensibly can now sue polluters should their functions be impinged. While there are many practical and jurisprudential questions around these kinds of rights, consider what the effort to answer them might do for this problem. If every major river had legal standing in its watershed, such that pollution represented a direct infringement and remedies pursued directly benefitted the river, waterways could not be regarded as mere waste conduits. For societies in which it is unusual, inventing ways to regard rivers as legal and moral persons to whom we are accountable may be a kind of anti-colonial cultural tonic, upsetting the

[22] See Lisa Song, "ExxonMobil Accused of 'Deceptively' Promoting Chemical Recycling as a Solution for the Plastics Crisis," *ProPublica*, September 27, 2024, www.propublica.org/article/exxonmobil-plastics-recycling-pyrolysis-lawsuit-california. In this book, see also Judith Enck's chapter.

common sense that rivers are resources and conveniences for sending plastic trash to those ancient beings, the oceans.

Good Life with Plastic

Confronting plastics, like confronting climate disruption and extinctions, involves thinking about how to live good lives in troublesome unsolvable relations. Some cultural responses think it impossible and look to colonize Mars—a telling impulse, damned in its premise. But among many counter examples, consider the *Buen Vivir* movement reclaiming and inventing ways of living well that do not depend on post-colonial modernization. When linked to political affiliations, that kind of work can begin as small as a food co-op with minimal plastics. There is meaningful work to do in reclaiming patterns of a good life that do not depend on, and are less constrained by, the polymer supplement created by fossil fuel extraction. As the Minderoo-Monaco Report notes, half of all plastic ever produced was made after 2002, which suggests that reinventing social forms that do not depend so extensively on plastic should not take a massive effort in cultural memory. A flourishing human life does not require so much plastic, although it may take intentional work to recover our own plasticity, our transformability by the goodness of creation.

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