**On global plasticity: framing the global through affective materiality**

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As a pervasive, material element of the global, plastics raise potent social and environmental questions. More than merely the ‘stuff’ of potential global prosperity, plastics are substances people inscribe with varied cultural meanings. Deploying conceptual ‘entry points’ for global research (Kahn 2014), we explore how global plastics have become not only a site of an emergent socioecological crisis but themselves a point of leverage for a more humanized globalization (Barnett 2020). We approach the problem first as an exercise in reframing, taking Teaiwa’s (2014) conceptual entry point of frames to shift our viewpoint away from debates on waste to re-examine ideas of culture and symbolism. Then, working through the entry points of the particular (Harvey 2014), materiality (Gille 2014), and affect (McKay 2014), we ground our argument in examples from contemporary pandemic response, earlier ethnographic work, and our own ethnographic projects. We show how plastics have failed people’s desires for a durable modernity, but nonetheless come to shape the ways they feel and think about themselves and each other as sharing responsibility for a global world.

**1 – Introduction - what makes plastic a global concern?**

‘Plastic’ is a catch-all category for a group of petroleum-based polymer materials: plastics. For a global public, ‘plastic’ is found everywhere, both in domestic and industrial settings, but also as a material in the environment. Recent estimates place the annual world-wide production of plastics is at between 322 - 380 million metric tons each year (Geyer et al. 2017; PlasticsEurope 2016; Statista 2018). Driven by technological advances and the formulation of new polymers which allowed new products to be developed, the burgeoning market for plastics expanded global commodity chains by supporting just-in-time deliveries. Plastics thus meant not only cheaper and faster production but more efficient transport, fueling globalization. Plastics increasingly supplanted other materials in the manufacture of everyday and increasingly short-lived or disposable items in the late 20th century. Today, 40% of plastics produced are used for packaging, often in applications designed for just a single use (PlasticsEurope 2016). 8,300 million metric tons of plastics have been produced thus far, with an estimated 60% of that having accumulated in landfill or become plastic pollution in the environment (Geyer et al. 2017).

Plastics create problems that, for the global public, are conceptualized first as waste and then as pollution (Henderson and Green 2020). Since the 1970s, environmental activism and public education on the plastic problem has focused on plastic pollution in the oceans (Carpenter and Smith 1972; Colton et al. 1974). Recent years have seen a rapid acceleration in the deposition of waste plastics in marine environments, so plastic pollution has become a more pressing concern (Eriksen et al. 2013; Lavers and Bond 2017; Vegter et al. 2014). Marine plastic pollution is expected to increase rapidly without drastic action taken to address faltering waste management and to reduce plastic production (Jambeck et al. 2015). Though the general public is most familiar with plastic waste as creating a marine pollution crisis, the science describing the plastic problem resists compartmentalizing.

Plastics move with wind and flowing water, connecting parts of the terrestrial and freshwater biospheres, moving between them as well as into the oceans. Redistribution of plastics by Earth processes creates both physical and conceptual distance between people’s encounters with plastics as commodities and plastics as pollution. Fundamental to this problem is the categorizing of plastics through much older categories of wastes. Plastics are much more obdurate and difficult to trace, control, and break down – or up, into very tiny but persistent nano pieces - than the materials they replaced (Roberts 2010). Framing plastics as waste shapes how people understand the work these materials do, economically and socially, as well as plastics’ eventual environmental consequences. Missing here is how plastics in their abundance materialize care and, in turn, what that care means for the kind of global we make and inhabit. Reframing plastics is vital to understanding how to better engage people to shift the structural conditions that sustain and augment a global problem.

People think of plastics largely as waste; the public tends to consider them cheap, disposable, and largely unremarkable, even invisible. If seen, they are often viewed as the garbage they will likely become. Research focusing on plastics’ journey to their eventual status as waste takes us across the globe, revealing how their production, exchange, use and disposal map people’s inequitable global obligations to each other and the biosphere. Given the unanticipated effects plastics may produce in terrestrial environments, rivers and oceans, and in human bodies (Jambeck et al, 2015), the global circulation of waste plastics in ever smaller pieces creates a crisis. This crisis can be addressed by technical ‘fixes’ such as new and better polymers, expanding waste collections, improved recycling systems, use of fewer mixed materials, and increased demand for recycled goods. But these fixes are insufficient (Lau et al. 2020) because the plastic crisis is not only a manifestation of an economy structured by the need to produce waste, but of people’s social relationships to plastic materials.

Plastics shape how people feel and think about themselves and each other as sharing responsibility for the global world. Currently, a cognitive dissonance exists between how, where and what plastic materials are disposed of at the local scale, and their documented effects on the global. We argue that this dissonance is enhanced by neglecting the study of the symbolic, ritual and affective aspects of plastic materials as compared to exploring their afterlives as waste. Research on the social life of plastics before they are discarded shows us how, by enhancing the global’s plasticity and making it more malleable to social and ethical concerns, global studies scholarship can produce a more expansive and flexible space where globalism can be reclaimed for ecology. The ethics of global care needed for this shift should be founded on an affective and material politics that encompasses not only decision-making about production, security and pollution, but the work that plastics are doing to shape and sustain social worlds (Drazin and Küchler 2015; McKay 2015). People recognize, though they may repress that knowledge, that plastic is a trickster (Drazin and Küchler 2015) and the everyday items which it makes are untrustworthy things.

The global economy relies on plastics very heavily and their use must be reduced. Rejecting these materials requires both the dismantling of the petroleum-based commodity chains that produce plastics and for people to reconsider the global social lives of plastics (Appadurai 1996; Drazin and Küchler 2015). Reviewing recent scholarship rethinking the broader meanings attached to plastics as foundational materials, we find that rather than rejecting the global, the most promising social solutions lie in enhancing the global’s inherent plasticity and thus humanizing both the global (Barnett 2020) and plastic materials. What emerges from the interdisciplinary global research on plastics are practices that reclaim globalism for ecology by developing an ethics of reciprocal global care founded on an affective material politics.

**2 –Finding plastic-before-waste**

To locate global plastics, we first place our argument within the dominant research paradigms which our approach complements and extends. We then ground the argument in a series of examples, drawing into conversation previous ethnographies, contemporary observations of the resurgence in plastics in response to the Covid-19 pandemic and our own collective, multi-sited and ethnographic research projects on plastics. Four of us are working on ethnographies of *plastic-before-waste*. In the hierarchy of refuse, reduce, reuse, recycle that is applied to plastic-as-waste, our work begins before that, with recognition, and then follows on to repurposing. McKay works on plastic crafts in the upland Philippines, while Stanes explores synthetic clothing in Australia. Lei has been working with participatory arts education on plastics in the UK as part of her PhD. Githua’s MA project studied craft-making from flip-flop waste in Kenya. Dixon, a hydrologist and GIS specialist, studies plastics, not as waste, *per se*, but as mobile materials caught up in global landscape processes (Horton and Dixon 2017). Together, our conceptual and critical transdisciplinary approach seeks to understand *plastic-before-waste* to explain how and why diverse groups of people have become attached to plastics in the first place, and thus how plastic becomes global and pervasive, and the global, plastic.

Our methodology for plastics research is thus global in two dimensions. We locate our own interdisciplinary approaches within and outside the broad discipline of geography and we also work with concepts from anthropology, discard studies and waste studies. To that, we bring our own particular positionalities. Githua, Dixon, and Stanes have studied plastics in their own places, doing much of their research in Kenya, the UK, and Australia, respectively. Lei and McKay have both studied plastics across cultural difference. McKay, who is anglophone settler Canadian, does her research with indigenous Filipinos in the northern Philippines. Lei, who is Han Chinese, works primarily with English-speaking communities in the UK’s deindustrialized West Midlands. Collaboration allows us to hone our comparisons and questions with a shared goal of shaping a public-facing pedagogy for plastics. Pursuing this approach here, however imperfectly, we recast plastics so that their symbolic and exchange values can be nuanced by the particularities of place, language and positionality. We do so in order to identify generalities that make plastics global.

**2.1 – Why reframe global plastic?**

By shifting focus to consider plastic as *plastic-before-waste* we turn to explore value in the forms of plastics’ social and cultural entanglements. We want to refocus on people’s engagements with plastic materials before they are discarded or wasted. We use Katerina Teaiwa’s (2014) work on making the global as a process of framing, but where Teaiwa’s unpacks the geopolitics that frame ‘the Pacific’, we disrupt the account of global plastic that frames plastics as ‘(already) waste’ or waste-to-come. Plastics are something else before they become waste. Only by understanding the social work they are doing in that before-waste space can we prevent them from becoming waste.

Scholarly work on plastic has tended to frame global plastic as waste of commodity chains. This research tracks the journey of waste plastics entering the environment which are being lost from what should be a closed economic system (e.g. Bucknall 2020). Viewing waste as an essential part of economic life and full of potential, scholarship here maps global waste in terms of flows and transformations of materials rather than considering it the endpoint of production-consumption-disposal chains (Crang et al. 2012; Gregson et al. 2010;). Such commodity chains studies are hugely valuable. They reveal the importance and place of waste in societies, and whether that waste is viewed as a hazard, filth, risk, out of place, disorder, a governable object, a commodity, an object of management, a resource (Moore 2012) or an exercise of power (Liboiron 2019). More recent scholarship on the new geographies of global waste has turned from these commodity-focused accounts to think about the materiality of waste itself. Materiality studies question what waste is, why definitions of waste matter and to whom, and highlight the need to engage with the materiality of waste in order to fully conceptualize it (Gregson and Crang 2010). Kirsch (2011) describes the new materialism in studies of waste as focusing on making meaning and valuing waste, describing the approach as a ‘gritty materialism.’ Gritty materialism emphasizes how this new focus on objects and the practices of wasting and coming apart can make visible interactions between physical and cultural contexts and material transformations that make ‘disposed of’ objects into objects of value.

These two approaches tell us much about global inequalities. By locating the economic externality of ‘waste’ at the center of their analysis, studies of waste plastics show how specific kinds of externalities are inevitable, even desirable, in the contemporary global economy (Hawkins et al. 2019.) Both approaches highlight how the flows of commodities, labor and the resultant secondary markets for revaluing waste involve a range of inequitable social processes (Gidwani and Reddy 2011). They reposition waste as no longer an “object of technocratic intervention” but as located in “critical set of spaces and moments within wider circulations of value and values” (Kirsch 2011, 437), that fuel neoliberal capitalist expansion. By centering economic outputs as the key generator of value, they draw attention to the social and material consequences of transforming one material into another as it moves through circuits of production, distribution, consumption, recapture and wastage (Gille 2010). As Gregson et al. (2010) demonstrate, the value of objects is not grounded in their function but in their materiality. It is the endless material capability and possibility for materials to be transformed and reworked into new forms of economic value that makes stuff itself valuable. Plastics, however, pose a problem here. Most petroleum-based polymers cannot easily be transformed and reworked and are thus, economically, very ‘low value.’ Although these economically ‘low value’ plastics are typically perceived as ‘waste-to-be’, we see that plastics are doing other kinds of important social and cultural work.

Plastics, most importantly, can be materials of desire. People value plastics for what they symbolize or devalue them for their perceived failings, even before any material encounter. One of the tricks plastic plays is that the same plastic may appear in different forms. For example, we might find polypropylene both in prestige ‘high tech’ athletic clothing and in cereal box ‘prizes’. When the post-World War II boom era saw the products of industrial modernity become widely accessible to an expanding middle class in the global North, such plastic prizes had prestige. Those previously excluded from modernity and consumerism found their entry point through these inexpensive plastic consumer goods. For the global North, global plastics are a form of technological fetishism that can have a particular kind of nostalgia attached to it. Privileged consumers here can maintain and express their imagined position in a global consumer hierarchy by consuming ‘throw-away’ plastic products of lesser sophistication.

Reframing global plastic to include desire, by exploring commodity fetishism and their cultural symbolism, can expand the scope of research beyond and before that of commodity chain or gritty materialist approaches. Examining the ways and forms in which plastics are rendered desirable or undesirable shows us a different and particular global geography. Below, we map out shared and general approaches to plastics to make this collectivity of polymer materials into that singular global social category ‘plastic’. By working across multiple sites, we try to agglomerate the particulars of plastic into global generalities. Thinking through these particulars (Harvey 2014) across our varied examples and fieldsites reveals how global plastic itself also shapes the local and regional particularities from which it emerges.

**3 - Plastics’ particular global geographies**

Plastics have cultural and symbolic significance as a globally pervasive set of materials which are used to produce a diversity of forms. Some of these forms are ubiquitous and now go almost unnoticed or are derided for their banality, such as low-density polyethylene packaging, particularly wrappers and carrier bags. Other plastics are recognized as high status consumer goods - the polyester in some luxury fabrics - or as life’s necessities, like polyethylene terephthalate bottles delivering water in a humanitarian emergency. All are ethylene polymer materials which take different forms. Plastic water bottles can be made into polyester to be blended into prestige textiles, even if the plastic and its source remain hidden from the consumer curating their wardrobe. We first see global plastic as made through the coexistence of all the very local and particular ways in which these plastic materials are made into different forms, marketed, appropriated and used to signify culture and status by everyday people. The global plastics we explore below are material substances doing symbolic and spiritual work. They have contemporary and local histories but are also now quotidian forms across all our fieldsites: masks, broken buckets and flip-flops.

**3. 1 – Masks: plastic and the aura of industrial capitalism**

The most obvious and novel global plastics are those that have proliferated in response to the COVID-19 pandemic. There has been a world-wide resurgence in single-use plastics as individuals and nations struggle to cope (EverydayPlastic 2020; Sukumaran 2020). Across the globe, plastic bag bans have been suspended (NYTimes 2020), and consumption of single-use plastic gloves and plastic masks for everyday self-protection has skyrocketed (University College London 2020). People around the world now see plastic as the material of hygiene – the stuff of PPE or Personal Protective Equipment - if they did not previously. Because plastic PPE materializes self-care and care for others in the pandemic, people may have set aside the problems ‘disposable’ plastics’ persistence causes for the environment in favor of hygiene standards and social responsibility. In this guise, single-use plastics’ assumed cleanliness, newness and, specifically, disposability are reframed as desirable. As Dey and Michael (2020) argue “everyday plastic products are tied into the largescale management of the COVID-19 pandemic, and re-purposed as part of a moral investment in the ‘saving of lives’.”

Plastic has become firmly attached to ideas of biosafety and surface cleanliness in public imaginations. Despite the particular local instantiations, whether that is in the preferred type of mask or the shape of visors and the plastics from which they are made – often polypropylene for the masks and possibly high-visibility polyester for the visors - or the packaging and bags in circulation, plastic is seen as hygienic. Ironically, public faith in plastics has been strengthened despite scientific evidence that the virus which causes COVID-19 persists, with infectious potential, far longer on plastic surfaces than on other materials (van Doremalen et al. 2020). This speaks to the symbolic, or even magical properties attributed to plastics. Beliefs in plastics can be so compelling as to lead people to discount the facts. Simultaneously, the steep decline in oil prices in the early pandemic produced inexpensive materials for polypropylene mask production, making apparently trustworthy disposable masks inexpensive.

People’s relationships here are fraught yet productive, as revealed by the constitutive contradiction of apparent hygiene yet persistent contamination. Plastics trick those who trust them. Their gloss of industrial production suggests to consumers that plastic products are standardized and will be predictable, durable, testable, reliable and safe. In this sense, plastics have an ‘aura’ (Benjamin 1935/1969). Plastics appear to carry a magical or supernatural charge from their industrial origins, calling attention, via their sensory properties, to the huge distances between the consumer and the presumably high-tech and industrial site of plastics’ production. Coming from an ordered, shiny factory far away and smelling of solvent, plastic items are imagined to be pristine by the consumer who touches them. Plastics’ aura is thus not the aura of unique authenticity described by Benjamin (1935/1969) for art, but an aura of mass-produced industrial invulnerability. This aura is appropriated and deployed by consumers against a world where superstition and rumor have increasingly been returning to shape public knowledge of contagion and personal susceptibility to a deadly disease. Plastic materials thus offer security through kite-marked protection against COVID-19’s un-seeable contagion. Plastic masks appear to render people as safe as they can be, with plastics materializing the science that is protecting populations. For many people, this science is being accepted as a spiritual or faith-based response to a world that looks newly-but-invisibly contaminated and dangerous.

Global plastic thus does spiritual work, rich in symbolism, sustaining faith in the benefits of industrial modernity. However, far too frequently, and all around the world, the plastics in which consumers place their faith are substandard, not up to the task. Plastic has become a disparaging adjective, even used as a pejorative, because people find plastic products unreliable.

**3.2 Broken buckets: materiality and crap modernity**

Plastics’ failures in the real, rather than the spiritual world, is familiar in the global South and in precarious communities in the global North. Failure here does not necessarily undermine wider global public trust in the potency of the materials themselves. In global media coverage of the pandemic, there has been a continual series of stories of masks, gowns and gloves where the plastic materials have been substandard, easily torn or ripped (Upadhya 2020). Media commentators tell the public about the hospital gowns sent back to manufacturers, substandard face masks binned by the order, and other plastic equipment that didn’t meet standards, but was sold on, anyway, by desperate producers and retailers (Christophers 2020). The stories told are typically about fraud and trickery and inexperience among people along the commodity chain, not failures of the materials themselves. But experiences in the global South tell us that, against plastic’s shiny aura of ordered, industrial invulnerability and traditions of entitlements, we should juxtapose the everyday plastics of suboptimal modernity.

People who have to ‘make do with’ and ‘wear out’ plastics live with plastics they cannot afford to throw away and replace. For them, plastics lose their aura very quickly. They prove to be fragile, easily sun-damaged, quickly roughened, attracting dirt and rapidly encrusted with bio-plaques, fade and crack. The technological fetishism underpinning plastics’ aura may obscure the conditions of their production, but it also hides their eventual fate. A plastic object’s properties of gloss or smoothness, strength and industrial infallibility are frequently limited and transient. Cheap plastics continue to make consumer goods accessible to those on the margins, initially doing the work of concealing precarity and poverty. But, when plastics fail and shatter, they mark expanding forms of precarity and inequality with piles of intractable discards and garbage.

This plastics crisis has been coming for decades. The post-war explosion of plastic goods for global mass consumption began in the 1950s and ever since, plastics’ materialities have been attached to the idea of the fake and inauthentic. Owners of new plastic things that should materialize progress and modernity find their possessions have been produced to be fragile, breakable, and to need frequent replacement. Buckets and basins, boxes and chairs made from molded plastics like polypropylene (the same polymer as masks) do not stand up to years of hard use. Instead, these fragile plastics comprise the material culture of people who struggle; they reveal those who ‘just can’t get ahead’, whatever they do.

Consumers’ frustration is often attached to the quality and manufacture, testing and standardization of the materials. Gille’s (2014) entry point for the global, materiality, explains this. Materiality shows us how the global is brought into being through the manipulation of materials, goods and standards. In Gille’s account, industrial production materializes politics in specific sites, clustering power at key junctures and within institutions that then take advantage of the vulnerabilities or lack of knowledge of others. In the COVID-19 pandemic, the sub-standard plastic hospital gowns, gloves and masks flowing along particular supply chains are made through this materialization of power. Plastics come with an attributed quality tied to place of production and, with that, slot into a contentious hierarchy of reliable places of manufacture. Some manufacturers cut corners, and this has often been associated with production in China. However, throughout commodity chains, some buyers are duped by higher-quality samples that conceal inferior-quality shipments, and brokers and re-sellers do not test their stock or accept falsified results. The attribution of blame to ‘China’ here becomes problematic.

The ephemerality of cheap plastic goods became visible by the 1970s. This was long before Chinese factories dominated global plastics production. The tricky nature of plastics was evident in Michael Taussig’s account of luxury consumer goods in 1970s Columbia. In *The Devil and Commodity Fetishism* (Taussig, 1980) explores the beliefs of people in Columbia’s Cauca Valley. Here, successful wage laborers in the cane fields were suspected of having made a secret pact with the devil to increase their productivity and, thus, their wages (Taussig 1980, 94). The money these cane-cutters earned, however, could only be spent on luxury items like sunglasses or fancy shirts (Taussig 2006, 70). All that they purchased was consumed, lost, fell apart or was broken. If cane-cutters invested this money in productive assets like land or crops, it did not produce a surplus. Having a pact with the devil thus enabled them to acquire new, modern things, but these items had to be constantly replenished to maintain their owner’s status.

Plastic goods wore out in a way that people explained to Taussig (2006, 69) with the Spanish verb ‘*secar*’ - to dry or dry up. ‘*Secar’* describes how the sun damages photodegradable materials that lose their sheen and become weathered, cracked or brittle. The word nicely captures the internal fracturing of polymer bonds behind, say, the cracked surface of a polypropylene laundry bucket. Where wood tends to warp, metal fatigues and breaks, and stone erodes, molded plastics crack and shatter. Taussig’s work shows how plastic endures as a crisis-proof material metaphor for the experience of modernity (Taussig 2006, 80), enabling a simulacrum of abundance that then provokes envy (Taussig 2006, 85). Plastics thus became the quintessential stuff of material excess which revealed the devil’s contract behind capitalism at work (Taussig 2006, 92).

Plastics’ fragility – their propensity to ‘dry out’ - means that plastic items became defunct or obsolete much more quickly than the same forms in other materials. The plastic through which people demonstrate faith in modernity ultimately fails them. Thus, on the margins of the global economy, owning plastics signifies an ongoing stream of cash income to replace these degraded items. As one respondent explained to Stanes and McKay in recent fieldwork in the Philippines, gesturing to a cracked polypropylene bucket, plastic goods in the local market are unreliable and thus undesirable. To be sure the observation resonated, they chose idiom shared by UK and Australian English: ‘crap.’

The ways plastics frustrate people’s desires for durable modernity produce two responses. The first is a widespread concern with veracity, quality and brand-named goods as a potential way of escaping or deferring eventual materials failures. McKay’s respondents found Philippine-produced shoes with plastic soles and uppers did not last, so they settled on ‘branded’ ‘Merrell’ shoes purchased overseas as a more durable item. These shoes were shipped home by migrant workers as markers of a secure modernity (McKay 2011). This response theorizes discernment amongst plastic goods and materials can be learned (McKay 2015), so people can educate themselves to avoid investing in fragile plastics. The second response blames the source of the goods for fraud and interpret plastics’ failures as human trickery or deceit. That source is most often ‘China’, and, since Merrell shoes and other high-status plastic goods are made in China, this seems more a metaphor than an actual place of manufacture.

People blamed China for cheap and inauthentic plastic goods, whether in the UK, Australia, the Philippines or Kenya. In Lei’s work in the UK, it was clear that her respondents considered that plastic materials themselves were ‘not genuine’, ‘fake’ or ‘inauthentic’. People attached those characteristics to materials because of what they made of them, who used the items, and how they fit into their own ideas of global hierarchies. In McKay’s (2015) work in the Philippines, people used the term ‘plastic’ itself as an insult, with plastic having entered Filipino slang to mean an insincere and fake person. Lei’s British respondents and Stanes’ Australians similarly categorized undesirable plastics as ‘Made in China’ and thus cheap and substandard because of their origins. ‘Made in China’ products are widely associated with poor quality (Kabadayi and Lerman 2011).

In the UK, Lei’s respondents would joke about their frustrations with plastic things like newly purchased yet broken earphones, saying “they must be from China”. For Lei, this marked a painful moment of global alienation. Her fieldnotes record discussions held inside her head. She would tell herself: “Yes, cheap and faulty consumer goods are most likely to be ‘Made in China’, because most things are…. now being made in China. However, ‘Made in China’ does not equal poor quality; many trusted brands are made in China.” Lei knew this not because she was a Chinese migrant to the UK, but because members of her own family had done highly skilled work in factories manufacturing prestige products with plastics. Her interlocutors were unaware of plastics’ commodity chains, how to discern plastics in prestige brands, and her family history. They shared this opinion of Chinese-origin goods with her as if it were an accepted fact. To her frustration, Lei found that some quality and apparently European-made products she knew were being produced near her hometown were hiding their ‘Made in China’ provenance in the small print (see Thomas 2007).

In Australia, considering people’s perceptions of synthetic textiles and clothing, Stanes’ research revealed similar confusion over origins. A loose elucidation of Rules of Origin (ROO) had rapidly shifted geographical connections of provenance, production and manufacture (Crewe 2017; Jones and Martin 2012) for textiles. ‘Made in...’ labels, according to Crewe (2017, 41), are now a mechanism through which producers and manufacturers can ‘creatively interpret the World Trade Organization’s ROO to sidestep regional and global quotas. Some manufacturers and brands have actively used ‘space and global complexity to create a […] system that is sufficiently intricate as to make the application of ROO extremely difficult’. In other words, producers, manufacturers and brands manipulate country of origin information to create value or influence consumer agency (Pike 2013). In practice, this means that items of clothing that have been ‘finished, labelled and/or packaged’ in a particular location (such as the location of the brand) can be labelled as ‘Made in USA’ or ‘Made in England’ (Crewe 2017, 41; Jones and Martin 2012). Working with her research participants, Stanes also found it was virtually impossible to trace where a piece of clothing had been made. Even when the label provided an origin, it was equally challenging to identify which plastic materials – which might include thread, buttons, interface, lining, beading, embroidery, sequins etc. - a particular garment contained (Stanes 2019). People nonetheless associated Chinese manufacture with perceived low-value plastic ‘polyester’ materials. China has thus become the metaphorical locus of complaints about a ‘crap modernity’ whose materiality is much more widely distributed.

Objects both made of plastic and labelled ‘Made in China’ appeared to carry social and class connotations people found problematic. The materials were prejudged as cheap and low-class, favored by the ill-informed. Behind a similar story of ROO manipulations as that found by Stanes, Lei discovered that the materialization of this story on plastics in the UK was then attached to Chinese ethnicity and nationality in a global ‘blame game.’ Similarly, Stanes found that even people who tried to exclude synthetic fibers from their wardrobes and despised ‘polyester’ (Stanes and Gibson 2017) were nonetheless using plastics in their clothing and were unaware of this. ‘Polyester’ was, for them, a catch-all term for cheap, often shiny, synthetics or blended textiles, rather than based on a discerning analysis of clothing labels and fibers. Often their favorite ‘prestige’ items in their wardrobes were made from polyester-mix textiles. So, the superior attitude people might express towards those they imagined were the ‘true’ consumers of synthetic clothing- poorer and less well-educated people - was unavoidably hypocritical. Avoiding ‘Made in China’ labels became a way people ‘in the know’ could avoid the trap of inadvertently purchasing ‘polyester’ clothes.

Plastics’ global materiality here operates both at the scale of geopolitics but also at that of everyday, one-to-one encounters and the negotiation of cross-cultural friendships or cross-class relations. The materialization of politics behind plastics unreliable materiality, its many possible forms, and its convoluted commodity histories has become entangled in relationships and research. Both Lei and Stanes found talking with people about recognizing and attributing origins to unreliable, crap plastics required sensitivity because plastics are layered with frustrated desires. This takes us to our final entry point: plastics’ affective work.

**3.3 – Flip-flops: affect and materialized care**

Cheap plastic consumer goods, synthetic textiles, and plastic PPE in a pandemic are all expressions of care. Just as materiality is, in Daniel Miller’s (2009) theorization, about comfort, relationships and feelings, applications of plastic do affective work. Whether people are choosing things, giving things, or maintaining things, Miller argues these exercises perform the work of care for self and other. Globally, it is clear people now express care through modalities facilitated by plastics: abundance, security, and hygiene. Following Mary Douglas (1973) (pace Liboiron 2019) and her ideas of purity and danger and the symbolic function of spaces and materials, we all found plastic materializing care through the humble flip-flop. Flip-flops are accessible and abundant all around the world. They are used to maintain a kind of spatial purity for domestic spaces and demarcate certain kinds of host and guest relations. By underpinning hospitality, they materialize the politics of dignity for much of the world’s population. An estimated 3 billion pairs of flip-flops find their way from sites of discard like garbage pits, dumps and landfills, into the world’s waterways and oceans each year (Micu 2017).

Plastics’ commodity story was the focus of Githua’s research on the making of used flip-flops into craft items in Kenya. Approaching flip-flops via waste studies would tell us that most flip-flops are made from polyurethane and ethyl vinyl acetate - plastic polymers derived from petrochemicals extracted in the Middle East (Knowles 2015). These polymers are most frequently turned into foam pellets in Korea, then exported to China for manufacture (Knowles 2011). Competitive start-up costs, ease of production and the low skilled labor available in industrial villages in the South East of China have made this region the world’s flip-flop production center (Knowles 2015). Most finished flip-flops are exported to regions of high demand: South Asia, Southeast Asia, South and Central America and Africa. There, they are sold in their millions for low prices in large open-air markets and small local shops (Knowles 2015). Flip-flops are often the only (or one of the few) pair(s) of shoes majority of the world’s poor own. They are valued, being continually repaired to stretch out their lifespan. Across the global South, flip-flops enable mobility for people who may have otherwise have to walk barefoot. Knowles (2015) describes an elderly woman who only owns one other pair of shoes beside a pair of worn flip-flops that she uses to navigate her daily tasks. She repairs her flip-flops regularly so that she can spare her ‘good shoes’ for ‘best.’ Plastics here enable her to use something cheap for everyday task, so that she can avoid wasting something of higher quality. At the end of their lifespan, flip-flop materials, polyurethane and ethyl vinyl acetate, are not recyclable, so flip-flops usually go to landfill (Knowles 2015). Because these materials do not decompose, they eventually find their way into waterways and oceans, either directly or indirectly or, if they are incinerated, produce hazardous gases (Yang et al. 2012).

Githua worked with the Kenya-based social enterprise Ocean Sole, to explore how some of the 19,000 tons of discarded flip-flops that end up on the countries’ beaches are cleaned and reprocessed into craft items for tourists. Ocean Sole’s small-scale remanufacturing initiative is the only way to redeem value from the material. Yet the social work of flip flops is significant (Githua 2019; Knowles 2015). Flip-flops are seen in virtually every nation and social class, and their popularity is linked to their low cost (Tenner 2004), but flip-flops also now come in luxury branded versions, which are, nonetheless, usually still made of polyurethane or ethyl vinyl acetate plastics.

Flip-flops are the preferred choice of indoor footwear where removing shoes before entering a building is a common practice (DeMello 2009, 130-131). This is particularly true in Asia, where wearing shoes indoors is disrespectful and unhygienic. The proliferation of flip-flops here is not just about hygiene, but also about hosting. Most houses anticipate guests with a selection of ‘guest flip-flops’ that wait in the receiving area inside the front door. Being able to afford spare flip-flops for an anticipated guest is a mark of material and financial security, an expression of status and class. Even that display of abundance may be out of reach of many. Beneath this profusion of cheap plastic flip-flops lies the affective work of the material. In McKay’s Philippine fieldsites, in the indigenous uplands of Norther Luzon, just having a spare pair of ‘slippers’ for guests marks a household as economically secure. Being able to accommodate guests and to provide food and foot protection and a commodious, clean environment distinguishes those who are just-about-coping from those living in abject poverty. Arriving at a house as a visitor, people are invited to wash their feet, store their walking shoes, and put on their hosts’ clean ‘house slippers.’ This practice of footwear hygiene keeps floors in living and sleeping quarters clean and reduces bacterial and viral contamination tracked into living areas from outside.

Flip-flops materialize the prestige that comes through visiting and hosting. Visitors who refuse ‘guest flip-flops’ and don’t remove shoes are hostile and rude, expressing ill-will towards their hosts, usually doing so from a position of implied social superiority. Conversely, houses with an abundance of guest slippers awaiting visitors belong to important, high status people, at least in local social networks. Find the flip-flops and you have typically identified the residence of a community leader from a faith or political network. Racks of tidy guest flip-flops by the house’s open doors materialize anticipated visitors, positioning the would-be host within an abundance of respect and good will. Through flip-flops, plastics circulate in an economy of reciprocity where abundance carries an affective charge. Clean and comfortable slippers that fit a variety of foot sizes embrace the guest, telling them their visit is anticipated, welcome and that they are cared for.

Plastics await guests inside these homes as well, where hosts likewise keep plastic-packaged and tinned foods in stock, uneaten, in anticipation of hosting. A colorful display of packaged cookies, sauces, candies and more, often shipped back to the Philippines by relatives working overseas, distinguishes an upwardly mobile household (McKay 2016). The more unfamiliar and exotic these foodstuffs are, the more global is the networked care that has provided them to be shared. These goods stand out in the local milieu, expressing both security and affection. Visitors themselves can, through the care of their hosts, experience a taste of the global when the packages are opened. The more valued and important the visitor, the more likely the reserve of imported food will be shared. Plastic here materializes care expressed through sufficiency of resourcing in global networks. Its abundance and replaceability provide reassuring security and evidence of ongoing stability. Plastic shoes may be ‘cheap and cheerful’ but here, with flip-flops and packaged food, the stuff plastic makes itself makes up consociality.

Flip-flops, in the global North, tend to be seen by privileged people as individual, disposable and convenient. Githua interviewed a tourist purchasing flip-flop craft items who explained: “They are so cheap, and I must go through about five pairs a year without ever stopping to think what happens to them after I toss them out.” Plastic materials are convenient, but not high status for these consumers, while it is the replacement and disposal cycle that expresses their status. This tourist is not someone who has their flip-flops repaired. However, with the pandemic, there has been a reported resurgence of interest in what are being described as ‘amphibious shoes’, based on a flip-flop-type form and made of polyurethane and ethyl vinyl acetate (Ferrier 2020). Alongside an incipient trend that may make shoes made from molded plastics ‘cool’ again, there is promising news of innovative plastic biomaterials. An American team have recently produced an algae-based plastic that could enable the production of a biodegradable polyurethane foam for footwear (Gunawan et al. 2020). So, flip-flops may be redeemed from their association with disposable fashion and resurrected as a new ‘green’ footwear choice, supporting materials innovation. The economics and waste-management streams that would be required, including potential industrial composting because of the sheer scale of items discarded, are yet to be assessed.

In flip-flops we have a globally shared material application, but one that means particular things to different consumers and disposers. In the global South, flip-flops form a necessary common of reciprocal hosting. They are the infrastructure of a social safety net and ensure social mobility. These flip-flops are not individual private property, but part of a shared household and community form of global consociality where plastic items are materials of domestic and relationship care (McKay 2015; McKay and Perez 2018). In the global North, new materials might enable flip-flops to become a more personal expression of care for the planet.

**4 - Conclusion: plastics materialize a humanized globalization**

Global plastics - our modest masks, broken buckets and flip-flops - take us beyond and before plastic-as-waste. Through these everyday things, plastics make an emergent global ‘we’ that sees them as a ubiquitous marker of care and a livable life. They mean particular things in different places, but all signify care and ‘progress’, ambivalent as those concepts may be. What some might call cheap but necessary plastic ‘tat’ that is endlessly replaced is, for others, a precious essential they wish were more durable. However, as the crisis-proof material metaphor for experience of modernity (Taussig 2006,80), plastics themselves have created a crisis of pollution. People familiar with plastics’ tricky properties know that the everyday items they rely on both do not endure but also fail to entirely disappear.

People’s concern about global plastics is growing. Changing their consumer practices alone, however, will not be sufficient to transform what is a structural imperative to create waste in the current global economy (Hawkins et al. 2019). Such changes will nonetheless be necessary. Against this structural imperative to make waste, making visible the role of plastics-before-waste can inform these necessary global strategies of rejection, regulation, redesign and material replacement required to disrupt current plastic economies. As we show here, it’s the global forms – the mask, bucket and flip-flop - not their plastic materials, to which people have become attached. People want things that they can trust, that are safe and durable. Thus, because these everyday items materialize care and respect, people’s attachments to them carry a potency that can be leveraged into grassroots campaigns for global materials substitutions, taxes, and bans.

Our global plastics here also reveal important features of the global. As Anthony Barnett (2020) argues, the COVID-19 pandemic has highlighted a stark incompatibility between two features of the global. One is that a free global market and its commodity chains have shaped the wealth of the world. This is counterbalanced by the other: a shared expectation of the right to life. The COVID-19 pandemic has demonstrated what Barnett (2020) calls a humanization of globalization.  Though globalization was produced by neoliberalism and authoritarian capitalism, it has generated its own countervalent moment of humanization. This humanization has very much depended on plastics being cheap, ubiquitous, disposable, clean and safe. Thus, our particulars – the masks and gloves, broken buckets, flip-flops – simultaneously demonstrate global plastic and reveal how that global plastic itself shapes local and regional particularities from which it emerges. Once people understand both the potency of plastics’ materiality and the power of the affective, social work they do, then it becomes possible to think differently. That is to think, not just about consumers recycling better or governments banning materials or finding new ways to reuse plastics, but about replacing the petroleum-based plastics in these desirable applications. Such replacements can sustain the particular symbolic and affective work plastics do, further humanizing globalization and showing us a malleable, open, expansive – plastic, even – version of the global.

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