



# Plastics and the coronavirus pandemic: a behavioral science perspective

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## Abstract

With the coronavirus outbreak, new and strengthened norms of plastic dependency emerged in the Middle East and North Africa region through the desperate demand for products like face masks and other personal protective equipment (PPE), highlighting the tradeoffs between health and the environment. While the rise in demand has been considered as temporary, behavioral barriers and misperceptions might make these norms particularly sticky and hinder society's ability to transition to a circular economy. Fortunately, behavioral science offers valuable insights about why the current pandemic can actually be a catalyst to create new eco-conscious behaviors. As some behaviors are often strenuous to change and require enforcement through traditional policy solutions (e.g. regulations), behavioral science offers complementary tools that will make policies more effective. We have an opportunity to start thinking about ways to leverage behavioral insights to create new norms that promote a circular economy while ultimately ensuring proper adherence to hygiene practices to curb the spread of the virus.

**Keywords** COVID-19 · Single-use plastics · Social norms · Middle East & North Africa · Circular economy · Pro-environmental behaviors · Nudges · Messenger effect · Defaults · Salience · Behavioral science

While governments are focused on curbing the spread of COVID-19, the current pandemic has demonstrated the world's enduring reliance on single-use plastics and the related tradeoffs between health and the environment. Public health guidelines on the use of personal protective equipment (PPE) and the increase in food delivery

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services, combined with the perception that reusable products are unhygienic, have led to a remarkable increase in plastic production and a strengthened norm of plastic dependency. Although the spike in demand has been labeled “temporary”, behavioral barriers might make this norm particularly sticky and further hinder efforts to transition to a circular economy in the long run (Kaufman 2020). The good news is however, that behavioral science offers valuable insights about why the current pandemic can actually be an opportunity to create new eco-conscious behaviors—in fact, we have begun witnessing some of these initiatives in the Middle East and North Africa.

The world undoubtedly relied on plastic prior to the pandemic. Behavioral science tells us that people prefer things to be easy and simple, which is one reason the low-cost convenience of plastic has fueled our dependency over the last century, evidenced by the estimated production of 9.2 billion tons of plastic between 1950 and 2017 (Parker 2018). However, growing awareness of plastic’s irreparable environmental impact has coincided with efforts to change the behavior of individuals, companies and governments and turn to more eco-friendly practices.

The result was the emergence of social norms that discouraged excessive plastic consumption and “throw away” culture, while encouraging movements like zero waste and the circular economy (i.e. a closed-loop system based on the reduction, reuse and recycling of resources). Our actions are motivated by both injunctive and descriptive norms—information that people disapprove of single use plastic (i.e. injunctive norms) as well as that more are turning to alternatives (i.e. descriptive norms)—which have shown to be effective in promoting sustainable behaviors (Clapp and Swanston 2009; Heidbreder et al. 2019). Additionally, a growing number of governments and corporations have taken regulatory action to either make it harder to use single-use plastic, or more convenient to use sustainable alternatives.

## 1 New norms and behavior around plastic consumption

The extraordinary circumstances of the current pandemic have quelled the power of these green norms, as the demand for desperately-needed products like surgical masks, gloves and other PPE has skyrocketed and overburdened supply chains. Many policymakers and scientists argue that from a public health perspective, the increase in plastic consumption is a necessary evil in response to the pandemic. This new behavior has been seen in the Middle East and North Africa, as countries like Jordan, Egypt and Morocco mobilized industries to meet the local and international demand for medical masks (Hamdallah 2020; Morocco 2020; Facing 2020). On the individual level, pharmacy customers in Lebanon were reportedly buying an average of seven masks per week after the Ministry of Health made it mandatory to wear one when leaving home (Houssari 2020). Worldwide, pictures of masks and gloves littering streets and rivers have made these new behaviors all the more salient.

A related behavior that has rapidly increased demand for plastic during the pandemic is our sudden dependency on delivery services. The UK’s Behavioral Insights Team (BIT) analyzed Google search trends and found that the week that the British government banned dining at restaurants, more people searched for food delivery

businesses than any week over the previous year (Powell 2020). The perception that people disapprove of others who leave their homes for unnecessary reasons has fueled this norm of staying home and ordering food. With this new behavior however, comes more waste, as food is put in plastic containers, which is then wrapped in individual plastic bags and placed in larger plastic bags along with disposable cutlery that are given by default.

Even now that countries are slowly reopening, this excessive use of plastic has stuck—it was reported that in Gulf countries, restaurants are serving dine-in customers up to three sets of disposable plates, cups and cutlery for a single meal (Malek 2020). But as sustainability experts in the region point out, it is not like practices prior to the pandemic were unhygienic—dish washing machines, high temperatures and detergent are effective at sanitizing tableware. This suggests that this decision to serve plastic to dine-in customers was motivated by misconceptions and fear, and only increases plastic consumption while failing to make it safer to dine at restaurants.

## 2 Alternative, sustainable behaviors can emerge

The surging plastic demand has brought up renewed conversations about our consumption patterns and the need to create new eco-conscious habits. As it turns out, the COVID-19 pandemic might be effective at doing just that. Known as the ‘fresh start’ effect in behavioral science, major life events—like a pandemic—can act as catalysts to change habits and form new ones. Behavioral science offers tools that can help us adopt new behaviors that promote the circular economy, while ensuring we adhere to safe and hygienic practices to help stop the spread of COVID-19. We should start by addressing the misconceptions and biases that have fueled bad habits, and encourage new behavior that will help us move to a more sustainable model.

However, transitioning to a circular economy presents numerous structural and behavioral barriers that may impede individuals from adopting this system. Behavioral barriers related to the lack of consumer interest and awareness prevail. Both producers and consumers consider plastic a default, go-to material. Behavioral science suggests that even if we are aware we need to change a behavior and have an intention to act on that knowledge, we often fail to take steps to realize the new behavior. We see this intention-action gap present in many sustainable behaviors, such as meaning to buy or make a reusable mask, or utilize reusable shopping bags, but failing to do so and defaulting to the single-use plastic option.

For example, nudges could be employed to encourage wider adoption of extended-use and reusable PPE among non-frontline workers. Such initiatives have been taking place across the Middle East, through calls to action and leveraging the ‘messenger effect’<sup>1</sup>—the phenomenon that people perceived as

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<sup>1</sup> H E Sheikha Hind bint Hamad Al Thani, Vice-Chairperson and CEO of Qatar Foundation, applauded an initiative encouraging reusable masks on her Instagram account, using the power of her public platform with over 60 thousand followers. See Bujukumar, 2020.

authority figures or highly regarded have more influence on consumer choice than alternative messengers. One such initiative in Qatar created a social media campaign calling on people to donate old thobes to be repurposed into DIY washable and reusable masks (Cherian 2020).

In Qatar, another promising initiative uses behavioral tools to promote sustainability during COVID-19. In partnership with a recycling company, a local supermarket has changed the default grocery bag option from plastic to recycled cartons to deliver groceries to customers (Lulu 2020). The initiative makes it simple for customers to switch to eco-friendly behavior while framing it as a way for people to stay home and save lives, making it the attractive choice. Since the pandemic has increased our demand for delivery services, this nudge could be scaled up and used by other supermarkets and restaurants to incorporate sustainable practices in this new behavior.

It is important to note though that there are structural barriers that must be addressed, related to material and cost. Governments might play a role in alleviating some of these barriers and promoting more sustainable practices through a combination of traditional policy tools and behavioral nudges.

The perception that plastic is hygienic has led to concerns over reusable or recycled alternatives (Schlegel 2020). Moving forward, mistrust of reusable products is a behavioral barrier that must be addressed. Evidence that single-use plastics are a safer option to reusable alternatives should be further studied. For example, some studies found that the coronavirus could stay viable on plastic for up to three days in lab conditions (Doremalen et al. 2020). Framing plastic as being a "protective" health material might lead to consumers choosing unnecessary plastic packaging that does not provide additional safety, but only the illusion of safety. As such, there is also room for nudges that correct these misperceptions of norms, which have proven effective at overcoming barriers to behavior change in areas such as healthy lifestyles and sustainability (Moran and Roberto 2018; Steg and Vlek 2009). There also has been a number of experiments that employ behavioral tools such as feedback and salient cues to improve behavior around recycling, and there is an opportunity to apply these to other sustainable behaviors moving forward.

Before the coronavirus pandemic, social norms had formed in regards to environmentally sustainable practices, leading governments, corporations and individuals to make smarter consumption decisions. However, among concerns over health during the pandemic, these norms have since been pushed aside, threatening the long-term impact on our environment. While some of our new behaviors around single-use plastic are borne of medical necessity, we should re-examine other behaviors that increase our demand for plastic while failing to provide protection against the coronavirus. As some behaviors are often strenuous to change and require enforcement through traditional methods (e.g. regulations and mandates), behavioral science offers complementary tools for addressing behavioral barriers that will make policies more effective. We have an opportunity to start thinking about ways to leverage behavioral insights to create new norms that promote a circular economy while keeping us safe from the virus.

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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