Urban Consumers and Natural Resources: An Ontology of Disconnection

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INTRODUCTION

The reality of a globalized world is that our lifestyles affect peoples and communities in far-off places. This is the case with extracting natural resources—particularly non-renewable materials like aluminum, copper, petroleum, and gold—to manufacture goods. Every consumer object is embedded with natural resources. The average desktop computer, for example, is manufactured using 1.8 tons of raw materials, while production requires an additional 240 kg of fossil fuels and 1,500 kg of water.[1] The process of extraction causes not only environmental impacts but also disruptions in local communities. Residents there may receive limited benefits from the sale of their resources while suffering from pollution, disrupted livelihoods or, in extreme cases, even displacement.

Due to urban lifestyles and their effect on the environment, it is important to consider the influence of urbanization in this process. Cities are home to most people, and make up the great majority of economic output, while requiring resources from oft-distant locations. As Brondizio et al. explain, we need "better understandings of connections between

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distant drivers affecting demand for agricultural land, terrestrial, mineral, marine, water, energy resources, and how their nexuses place burdens on different regions and sectors of society."[2] This article attempts to fill this conceptual gap between cities and nature by presenting the argument that deepening urbanization increases the disconnect between consumers and the impacts that their lifestyles have on the environment. It examines this through several theories related to disconnection and suggests that a potential solution can be found in the form of "spatial justice," achieved through the lens of "environmental justice."

BACKGROUND: CAPITALISM AND OUR DISCONNECT FROM NATURE

There is a link between economic systems and consumer habits, but present-day capitalism is particularly adept at spurring the increased use of materials and resources. Ongoing globalization—deeply intertwined with consumerism—facilitates greater interconnection worldwide, making economies more integrated while their extended value and supply chains draw resources from far away. In an increasingly interconnected world, the reality is that "small actions at a local scale can add up to positive or negative impacts at a regional or global scale that affect distant areas at an increasingly rapid pace."[3]

There are clear connections between capitalism, consumption, resource use, and associated environmental effects. Analysis shows that "a significant proportionality between consumption and impact exists for a large range of environmental, resource and social indicators."[4] As Benett and O'Reilly point out, "the problem with our obsessive consumption—even overlooking such pesky considerations as the plundering of our natural resources—is that it managed, in the last half-century, to become our culture."[5]

The Importance of Examining Resource Use

How humans live significantly affects the natural environment. The common term for ways of living is, simply put, a lifestyle. Lifestyles may vary in countless ways, and none of them can be separated from human consumption and their use of resources.

What is the extent of the human population's and their lifestyles' impact on our environment? As a species, *homo sapiens* have caused permanent changes to the Earth. Humans are the dominant residents of the planet, and as the United Nations Development Programme (UNDP) explains, "for the first time

in our history the most serious and immediate, even existential, risks are human-made and unfolding on a planetary scale."[6] The global population, currently numbering seven billion, is projected to peak at around ten billion by the end of this century. Overpopulation is one concern, but an even larger one might be the infinite appetite for resources.[7] In the last century, as the global population increased by a factor of four, the consumption of extracted energy and materials increased even further, with fossil, ores and minerals, and construction materials growing twelve, twenty-seven, and thirty-four times, respectively.[8] At present, no part of the world has been untouched by human beings.

Moving beyond humanity's general influence, we need to consider the disproportionate effect of the wealthiest; their outsized impact means that the responsibility for environmental harm is not equal. Who can afford to live in McMansions and travel by private jets? In short, the wealthy create more harm. Focusing on a wide range of environmental impacts, including deforestation, habitat loss, and water pollution, research has shown that "overall wealth is the most important correlate of environmental impact."[9] Wiedmann et al. suggest that "consumption of affluent households worldwide is by far the strongest determinant and the strongest accelerator of increases of global environmental and social impacts."[10]

Capitalism as a Driving Force Behind Consumerism

Capitalism is the main driver of the global economy, including its particular way of relating to nature. With the drive to maximize profits serving as the principal motivation, the natural world provides resources to be exploited for capitalist objectives. Therefore, the capitalist approach is what continues to lead the aggressive search for and use of the Earth's riches, whether energy and minerals, or fisheries and forest. Materials that accumulated over millions of years are harvested, extracted, captured, and processed into millions of products, all in the geologic blink of an eye.

Capitalism is the most influential economic system in the history of the entire world. Most countries take part in the global capital market, and capitalist states make up most of the largest economies. In 2018, the United States, China, Japan, Germany, and the United Kingdom were greatest when measured by GDP in billions of USD.[11] China is the exception here, though its consumer drive is alive and well. Based on what has been labeled "state capitalism,"[12] its industrial output and export economy have been essential in fueling the global economic system. China's urban centers and burgeoning middle class are now a part of this calculation, with residents capable of engaging in consumption that is not dissimilar to the United States and Japan.

The country is the global epicenter for luxury goods, accounting for 40 percent of global demand in 2021.[13]

Notably, the capitalist-consumer system has enabled more people to live better lives than at any time in human history. It has led to a transformation of energy and materials into economic growth—as measured by GDP—has increased exponentially, while global poverty has plummeted over recent decades. Amazingly, this has occurred even though there are now more people on Earth, and they require more resources than ever before. Comparing countries' Human Development Index ranking with use of "personal wealth and resources" shows a positive correlation between material consumption and well-being.[14] However, we must recognize that in helping to improve millions, and indeed billions of lives, capitalism has relied on tapping Earth's nonrenewable energy and resources. This reveals the challenge of the Anthropocene, as materials accumulated over eons are now consumed within decades.[15]

The future is one in which increasing affluence plays an even greater role than population in terms of resource use. It is estimated that "the world economy could more than double in size by 2050, far outstripping population growth, due to continued technology-driven productivity improvement."[16] Even after the number of humans peaks and starts to decline, the need to supply them will remain an increasing environmental burden. Which countries will serve as drivers? The remainder of this century will be driven by emerging economies, and by 2050, the projected top economies by size are China, India, the United States, and then Indonesia.[17]

Consumer-driven lifestyles presently found around the world are in large part driven by capitalism. In fact, today, capitalism is effectively considered synonymous with consumerism. The term "consumer capitalism" is used to describe this phenomenon, and today it has become "a dominant industrial force," with a "capacity for proliferation – to turn nature into dazzling aisles of consumable goods."[18] It seems that the link between capitalism and consumerism is partly due to cultural norms (e.g., Europeans generally live with a smaller number of higher-quality goods) but also a reflection of available discretionary income. The current capitalist model drives a particular type of consumer whose habits are exhibited in an exploitative lifestyle and a super-charged hyper-consumerism.

Consumer Lifestyles and Disconnect from Nature

The modern form of consumerism, with its focus on expansion, newness, and replacement, including a preponderance of single-use products, fosters a disconnect between people and nature. Why should

someone care about from where an item comes, when it is only in their lives for a short time, and can easily be replaced through another cheap purchase? Consumer society is focused on giving people freedom of choice in acquiring a nearly endless array of items.

Regardless of a country's type of economy, hyper-consumerism has swept across the globe. This phenomenon consists of the omnipresent, intense, often insidious social pressure to collect more and more items, which are sometimes pejoratively referred to as "stuff."[19] These are the products, goods, objects that we surround ourselves with, and whose origin we often know little about. Materialism leads people to seek comfort through possessions, explains Kasser, but data shows that once basic needs are met, further material attainment is not necessarily associated with an increase in happiness; instead, it leaves people feeling empty, leading to a further cycle of spending.[20] Schor calls this "the paradox of rising consumption and pervasive dissatisfaction."[21]

Indeed, the connection between people and nature is more important than ever before. In its *Human Development Report 2020*, UNDP explains the importance of appreciating the link between humans and our natural world. Establishing the importance of recognizing such a connection, UNDP asserts that, "it is essential to do away with stark distinctions between people and planet. Earth system approaches increasingly point to our interconnectedness as socio-ecological systems."[22]

And yet consumers, in many respects, are disconnected from the impacts of their lifestyle choices. Privileged global elites fail to internalize that their comfortable existence depend in part on sourcing materials from distant places. As West-Pavlov writes, Foucault's concepts enable us "to think beyond everyday activities to processes which make those everyday activities possible."[23] We are not sufficiently appreciative, and "because we generally take such conditions of possibility for granted, we remain blind to their significance."[24] He goes on to explain that there may, in fact, be a more intentional form of ignorance, as "frequently, conditions of possibility of our existence are quite deliberately located out of our sight so as not to disturb our contented oblivion."[25]

Admittedly, not all responsibility may lie at the feet of consumers. Perry et al. explain that it is difficult for people to connect with nature as "linking individual behaviors to ecological impacts are further obstructed by difficulties in quantifying environmental change and impacts."[26] But what we can say is that there is concern that in a more urbanized world we are less aware of our impacts, and less in touch with nature. Perhaps it is not feasible to hold consumers responsible. The links between people and

nature are rarely clear. Regardless of our degree of knowledge and motives, the products in our lives "may be produced in non-Western countries by people working long hours for low wages and without elementary forms of social security, but this remains largely irrelevant to us because it is conveniently beyond our horizons."[27] In the end, capitalist consumers are less connected to the impacts of their lifestyles, while global trends lead to increasingly industrialized, urbanized, and materialistic lives.

AN ONTOLOGY OF DISCONNECTION: FROM EXTRACTION TO CONSUMPTION

How can we account for the disconnect between consumers and the resources they require to build, heat, move, and accessorize their lives? The separation between those who are on the "inside" or "outside," rich or poor, close or distant, comes in many forms, including spatial, geopolitical, economic, territorial, social, and cultural.[28] There is inevitably some overlap between these different areas, and no one lens is sufficient in and of itself. Based on a review of a select number of major theories posited to explain separation at various levels, from global to national to individual, this section considers geographic (spatio-political), historical, economic, and cognitive reasons for consumers' separation from the resources they rely on. They serve as a heterogenous set of theories that can explain the level of disconnection, or disassociation, experienced by consumers.

Spatio-Political Disconnection

Spatial theory provides a key means of understanding power differentials that exist between different locations. The best place to start is with Foucault, who wrote in 1967 that when it came to spaces, "we are in the epoch of simultaneity: we are in the epoch of juxtaposition, the epoch of the near and far, of the side-by-side, of the dispersed."[29] He put forward a new spatial notion, that of "heterotopia," which are "counter-sites," and represent "a juxtapositional, relational space, a site that represents incompatible spaces and reveals paradoxes."[30] Because of heterotopias, there can be utopias. There is the sense that those places that are outside make the inside possible.

More recently, the geographical concept of space was enunciated by Giorgio Agamben, writing on a spatial theory of power. He looks beyond "spatiotemporal" differences, or "traditional political geographical theories about inclusion and exclusion, belonging, and insularity," and considers

the political exclusion of a certain set of peoples.[31] Here, the spatial and the political disenfranchisement and disregard for others go hand in hand.

Historically, past centuries have seen an incorporation and consolidation of many land areas into nation-states. Focusing on Southeast Asia, Scott notes that "non-state space" was predominant until the more recent era of human civilization, when a process of enclosure by powerful centralized states could "bring nonstate spaces and people to heel."[32] This fits in as "an effort to integrate and monetize the people, lands, and resources of the periphery."[33] Moreover, the post-World War II period witnessed decades of decolonization, wherein former territories were broken up, and by the end of the 20th century most land around the world was associated with a nation-state.

Over recent decades, there has been a shift in the global system of nation-states and the concept of sovereignty itself. As such, according to Sassen, the traditional notion of states (including well-defined borders, centralized power, and control over its citizenry) may have become obsolete.[34] In an era of intensifying globalization, multinational companies, terrorists, financial institutions, the International Criminal Court, and social media-inspired civil society all operate across state lines. A characteristic of this transition is, as described by Sassen, "large-scale land acquisitions by foreign governments and firms," with the result that "interstate borders matter less today for many international flows."[35] Sassen writes that, "at least some of the critical components of this territorial authority…look national but are actually geared toward global agendas, some good, some not so good at all."[36] This means that some areas of the world exist outside of the control of a state. The residents of these places are not protected by a national government and are deprived from legal means of recourse to any infringement of their rights in the international system.

Even cities that remain part of a country existing within the state system can become more separated, through "peripheralization". This concept is defined as "spatially organized inequality of power relations and access to material and symbolic goods that constructs and perpetuates the precedence of the centres over areas that are marginalized."[37] Whereas there can be countries that are more isolated or disregarded, so too can cities be left out, and spatially differentiated.[38] As Fischer-Tahir and Naumann explain, "peripheries emerge from the intrinsic logic of uneven development in capitalist societies."[39]

In essence, though not Foucault's original intention, it is possible that the concept of "territoriality" is most important, as an area of land or territory can be delinked from political control over it. Sassen further explains

that, in our era of mapping the world, it is possible to notice new spaces—a *terra nullius*—that do not quite fit into the formal system of states.[40] They may be overlooked, leading to "the conceptual invisibility of territories that exit the state's territorial authority.[41] The result is "the emerging instability of traditional versions of territoriality, partly as a consequence of globalization" and "asymmetries between territory and territoriality."[42] There may be land, but it is not always controlled, defended, or cared for. Those that do have control may not be thinking of those they harm. As Andreucci and Zografos put it in reference to Klein, "to the extent that they follow an extractivist and colonial logic, large-scale renewable energy and associated extractive-infrastructural projects are illustrative of 'necropolitical,' exclusionary uses of othering."[43]

Economic Disconnection

Though described above in geographic terms, spatial theories are closely linked to theories on economic systems. A prominent one is dependency theory. Considered from a global perspective, dependency theory views the world as one in which weaker post-colonial countries are trapped in a system of supply to and exploitation by powerful developed countries. Serving as a counter to modernization theory's optimistic view that contact benefits less-developed countries, it laid the foundation from which world-systems theory emerged. Specifically, Wallerstein's explication of world-systems theory arose in the 1970s and provides an economic explanation for differences between countries, dividing the world into three types of regions: core, periphery, and semi-periphery. The periphery exports unprocessed materials to more developed and powerful parts of the world (the core), which controls trade and uses it to accumulate more capital. In essence, the core exploits the periphery.

The separation between beneficiaries and the exploited can also be considered from an historical angle. *Peripheralization* refers to an active process of detachment created by modern development processes. Le Billon writes that "theories of uneven development suggest resource dependence has spatial dimensions, expressed as selective processes of modernization and peripheralization combined with the production of hierarchical scales predominantly defined by their relationship with the resource sector."[44] Additionally, the "geographical contributions in this regard can capture processes of peripheralization and uneven development defining social relations around resource exploitation."[45]

In summary, the capitalist system itself is a driver of the separation

into different geographic zones. From this perspective, part of the distance between people is economic and self-serving in nature, as companies are driven by profits while far-off consumers are motivated by utility.

The geographer David Harvey presents a more recent take. Published in 2006, his book *Spaces of Global Capitalism: A Theory of Uneven Geographical Development* considers capitalism in its current form and the resulting increase in inequality between countries. The text is known for "tracing the uneven geographical development of capitalism."[46] However, the disconnect is bridged by the very goods that make up the capitalist economic system. Le Billon notes, for example, that "geographies of commodity chains connect spaces of production and consumption," and that these different sites are vertically connected.[47] Those who consume and thereby use resources are tied to the places from which those materials arrive. Meanwhile, the process of further globalization deepens the connection between different places while also, in many cases, increasing the inequities between them.

With a deepening of global connection, it is possible to look throughout recorded human history and find cases of separation, division, and othering. One of the most profound and relatively recent eras was that of European exploration and its following colonial rule. Although 500 years of colonial imposition saw a sharp decline in the "decolonization era" after World War II, coercive economic relationships between former colonizing powers and the formerly colonized remain ever present. As such, the term *neocolonialism* is used to describe the process whereby previous rulers continue to exert influence, if not outright control, on former colonial subjects through coercive economic or political relations. West-Pavlov states that, "the wealth and prosperity enjoyed by us today is often the direct result of colonial or imperial exploitation in the past."[48] Moreover, Boano correctly notes that "modernity is a colonial modernity, and its histories and geographies have been made in the shadow of colonialism."[49]

Cognitive Disconnection

Through the everyday practices that require people to view and conceptualize their worldviews, they also, explicitly or implicitly, create cognitive distance from spaces outside their mental frames. As a result, their daily lives continue without being overwhelmed by the burden of their environmental impact. Implicit processes include generation of "cognitive distances" occurring through "intertemporal discounting," in which people consider future effects as less important than those in the present

moment.[50] Conversely, people may also understand the impacts of their consumption but rationalize it with the notion that they are doing good in other ways. A suitable example would be an individual who proudly recycles their newspapers and cans each week, which then gives themself mental permission to fly on an airplane. In effect, consumers are able to go about their lives more freely because the convoluted supply chain maintains a disconnection from their impacts.

Such logic, however, is premised on false equivalencies. Humans are swayed by the "balancing heuristic," which enables an internal accounting for behaviors or actions that positively or negatively affect the environment even when they do not equate. As Sörqvist and Langeborg explain, there are "misconceptions that 'green' choices can compensate for unsustainable ones."[51] As such, people can use their environmentalist actions to justify the way that their lives require natural resources from elsewhere. In addition, it is possible that an eco-minded person might make what they think is a green decision, but actually cause more harm.[52]

Psychologists also note the difference between the abstract and the concrete. Human beings are more likely to act on the latter, implying that the thought of some far-off environmental impact is probably going to be less influential.[53] Another explanatory factor is a human tendency of outright denial,[54] including denial of caused harm; individuals are somehow able to distance themselves from the injury or even death of others.[55]

In sum, what can we say about the effect of lifestyles on resources drawn from elsewhere? The reviewed theories provide both overlapping and competing explanations that help determine the level of connection or disassociation between consumers and the resources on which they depend. An overview of these theories of disassociation is shown in Table 1.

TABLE 1. OVERVIEW OF KEY DISASSOCIATION THEORIES

Type	***Key Terms***	***Summary***	***Affected People and Places***
Spatio-Political	Heterotopia Camps Spatial theory of power Borders Territoriality	Spatial and physical distance People separated into worse places (which allow the central place to exist conceptually) Parts of the world do not fit into the nation-state and are not protected, or are disadvantaged	Far off People grouped and differentiated Outside of the state system Unprotected or not cared for
Economic	Center-periphery Neocolonialism	Economic differences/ or a relationship Capitalism increases the differences Exploitation, or a subservient supply-chain relationship Influence based on previous colonial relationship, based on the past	Periphery supporting core Unequal development Increasing inequity- Affected economically, culturally
Cognitive	Intertemporal discounting Balancing heuristic	Individuals and the use of heuristics; people find ways to justify or deal with the separation	Overlooked by people Sometimes unintentionally harmed Seen, impacted, but not considered

THE IMPLICATIONS OF URBANIZATION: RESOURCE USE AND DISCONNECTION

Increased industrialization—closely tied to urbanization—leads to more resource use. At the same time, there is a disassociation between consumers, particularly urban ones, and the environmental impacts of their lifestyles.

The Role of Cities, Industrialization, and Urbanization

Increased urbanization has followed the industrialization of modern society. In cities, this is based on the "strong relationship between urbanization and income: as countries get richer, they tend to become more urbanized."[56] In fact, *homo sapiens* is now a metropolitan species, with 55 percent living in urban areas as of 2018. This figure is projected to increase to around 68 percent by mid-century.[57] The rapid pace at which humankind is urbanizing serves as "a key indicator of the accelerating human endeavor in the Anthropocene."[58] Cities will be even more important in the future with many of them expanding in size, leading to a 171 percent increase in their ecological footprint worldwide between 2015 and 2050.[59]

Highly industrial and urbanized countries, on average, have a greater per capita effect on the environment. Humans are using more resources than nature can replenish, and "urbanization is a key factor that accelerates depletion since an increase in urbanization leads to an increase in natural resource consumption."[60] UNDP's 2020 *Human Development Report* includes data showing that "countries with higher human development tend to exert more pressure over greater scales on the planet."[61] Wealthier people, who are more likely to live in cities,[62] typically have a higher standard of living,[63] and thus have greater environmental impacts. According to the United Nations, "environmental sustainability is additionally challenged by the consumption patterns that prevail in urban settings. Owing in part to their higher incomes, urban dwellers tend to consume more per capita than rural dwellers."[64]

Cities need to draw on resources from elsewhere, a process that has a significant though oft unrecognized impact on distant places. The massive human agglomerations where we live cannot exist by themselves; "urban areas are dependent on extracting external…resources," and "cities have long been known to depend on their natural hinterlands."[65] As Rademacher states, "planetary urbanism emphasizes the almost infinite connectivity between concentrated city zones and their hinterlands."[66] Elmqvist et al.

concur, stating that "human activities, not least in urban regions, increase the spatial dimensions of connectivity," and that in terms of related drivers such as trade and consumption, "the speed and scale at which they occur are unprecedented."[67]

As affluence, urbanization, and industrialization increase, so too does the level of potential harm to the natural world. This is not surprising, and with it increases the disconnect to impacts on the natural environment. In cities, people's "disconnection…tends to lead to the undervaluation of remote nature—and associated deforestation and other habitat destruction."[68] Cities' continued expansion in size and scale lead to "a series of challenges varying from natural resources consumption, or 'spatial peripheralization,' to the development of social and economic imbalances and physical and environmental degradation, in a process of 'a-spatial peripheralization.'"[69] Cities can be spaces places that are themselves spatially differentiated, and at the same time distant from the other places and peoples that their residents marginalize.

In a way, it seems that where go cities, so goes the future of human society. As a result, this makes "global urban change a frontier of science for sustainability."[70] Moreover, "humans must confront the material and social experience of living on a planet dominated by concentrated human settlements and their associated processes as never before."[71] Cities are key in terms of environmental impacts and sustainability since they all "depend on large imports of energy and other natural resources to satisfy consumption of their inhabitants."[72] Ultimately, "how resource use develops in cities has strong implications for resource flows in different scales and related pressures."[73]

The Greater the Industrialization, the Greater the Disconnect

The disconnect that city residents have from nature exists in multiple forms. There is "the increasing physical and cognitive distance between (re)sources and consumers as well as actions and outcomes."[74] On the one hand, "globalization, advancing technological development, commodification, and sectoral compartmentalization are adding a growing number of intermediate steps between people and the resources they use, such as natural resources, information, and technology."[75] On the other hand, an "ever-greater cognitive distance makes it increasingly challenging for people to know the impacts of their consumptive decisions."[76]

Such mental separation may be deliberate through a process termed "strategic ignorance." This phenomenon occurs when "people benefit from

ignoring information about the harm they cause, because ignorance reduces feelings of guilt."[77] Or, according to research by Slovic, "psychic numbing" occurs as the size of a problem, or an emergency, gets larger. An increase in the number of people who are harmed leads to a decrease in empathy,[78] and the result is an inadequate response to the problem.[79]

Urban denizens are not always aware of their connection to resources at a distance, and some authors question whether we can expect them to be knowledgeable. Elmqvist et al. observe that cities need external inputs, and "an increase in global connectivity and redundancy of supply systems has masked this dependence, particularly consequences of local resource exploitation."[80] Admittedly, city dwellers have had difficulty making informed decisions that serve to mitigate such consequences: "it can be challenging, almost impossible, to make positive choices for sustainable consumption with so many information [sub-]steps within each step to understand or have information on to inform consumption practices."[81] Even if city dwellers have a broader awareness, Wiedmann et al. provide further support for their innocence when noting that "scholars of sustainable consumption have shown that consumers often have little control over environmentally damaging decisions along supply chains."[82]

DISCONNECTION THROUGH EXTRACTIVE PROCESSES

The takeaway from previous sections is that the inhabitants of cities in highly industrialized capitalist countries, who make up the greatest share of wealthy consumers, are *more harmful* and yet also *more disassociated* from the impact of their lifestyles. The paradox emerges that although there are higher levels of education in more industrialized countries that can lead to increased awareness, it is these very industrialized countries in which the disconnect with nature is greatest. Sometimes this is by choice, and sometimes it is unintentional. Either way, the increased propensity for environmental harm remains. Broadly speaking, this paper posits that comparatively more industrialized and urbanized societies (1) have a greater impact on nature and (2) are more disconnected from their impact on nature at a global level.

What type of evidence would demonstrate the occurrence of this disconnect occurs in cities? Table 2 presents data that reveals the separation between cities and the resources that support them.

TABLE 2. HOW CAN INCREASED URBANIZATION LEAD TO FURTHER DISCONNECT FROM NATURE?

Type	*Indicators Within Cities*
Spatio-Political	People move to urban areas. This increases their physical separation. More people in cities leads to increased dependence on longer supply chains. Cities may interact and benefit from relations with places that operate outside (or partially within) the state system. Overall, this benefits urban areas at the expense of rural areas.
Economic	Economic power deepens in cities. This increases the relative importance of cities compared to other less important locations. History of cities and reliance on colonies means that some urban locations' growth relied on colonialism. Urban areas continue to gain from their previous relationships with subordinate locations.
Cognitive	People become less connected when living within cities, becoming separated from both nature and their own individual effects. As a result, growing city populations add to the number of people who are disassociated from the effects that their individual lifestyles have on nature.

The following section will consider whether a singular approach has greater explanatory power, or whether a combination of approaches is more useful. It will do so by applying the theories not only to supply chains but also to the movement of resources to industrialized economies. The evidence that follows is selective and does not cover the entire world, but it effectively demonstrates how urbanization leads to further disassociation from environmental impacts.

Evidence of Spatio-Political Disconnection

Further urbanization and growth deepens cities' impact on nature. The European Environment Agency remarks that, "the move to cities is increasing the incomes of millions of people," which has therefore led to "the rise of consuming classes around the world."[83] Indeed, it has been estimated that the number of middle-class consumers increases by 150 million

annually.[84] This represents a lot of new household appliance consumption, expansion of air travel, and use of resources. Overall, an increase in the number of consumers presents a double-edged sword; they at once spark economic growth and "exacerbate the demand for natural resources and food."[85] In the end, "the future growth of cities and concomitant appropriation of land and natural resources will determine success towards an environmentally sustainable future."[86]

Extended supply chains result in consumers being less aware of from where items they buy come. Measures of "supply chain proximity," such as that for food, reveal this phenomenon. In low-income countries, in order "to supply increased volumes of food demanded by urban consumers, supply chains must lengthen geographically, increasing the potential to reach farmers in more and more distant areas." This may benefit those who grow and sell the food,[87] but also brings environmental impacts as a lot of it is imported. Consider the United States, where "each year, more than 5.7 million tons of both domestic and international food shipments flow into New York City, snaking their way over sea, rail, and road from farms, fisheries, and factories to the city's retailers and restaurants."[88] Often, food travels far as "supply chains [that] can span a large geographic distance. In Beijing, for example, the chain for rice, fish, and potatoes can reach 600–800 miles outside of the city."[89]

Miroudot and Nordström found that for some products, the locations for sourcing exist at longer distances.[90] They examined a set of sample countries (twenty-seven EU countries, Canada, Mexico, and the United States, as well as major countries in the Asia-Pacific) between 1995 and 2011 and found that the average distance inputs travel increased in all but two years; the average distance increased from 1,545 km in 1995 to 2,200 km in 2011, a 42 percent increase.[91]

Furthermore, there are parts of the world that operate outside of government control and yet are connected (albeit distantly) to the globalized economy. One example is small-scale Indonesian coffee farms set up within national parks that operate without government oversight yet form an integral part of global supply chains, which in turn provide caffeination to sleep-deprived consumers.[92] The same farms play a significant role in large-scale deforestation.[93]

In summary, urbanization and increasing migration to cities—a key demographic change—also have implications for geography, as it means that more people will likely be less connected to nature. Some supply chains can be quite long and unclear, which had led to uncertainty about the provenance of the products in our lives.

Evidence of Economic Disconnection

The difference in living standards between cities and rural areas is nothing new. Indeed, "for centuries, cities have offered higher standards of living than rural areas."[94] In Asia, for example, the average income for those living in Chinese and Indian cities is approximately three times larger than for their rural compatriots.[95] There is also a shift in the location of the most prominent global cities. Data shows that between 2011 and 2025, the top 600 cities "will generate 60 percent of global GDP growth during this period."[96] Interestingly, though, these cities will exist more in the Global South. Writing in 2012, Cadena et al. explained that "between now and 2025, the center of gravity of the urban world will shift South and East."[97] Overall, cities are still places of greater impact, but some of these urban areas will be located in formerly "distanced" places.

Recently, there has been mixed evidence in terms of the gap between rural and urban areas. Chen et al. found, while studying Chinese provinces for the years 1978 to 2019, that "urbanization widens the urban–rural income gap."[98] Imai and Malaeb state that on one hand, "China's income inequality is characterized by rural-urban disparity," but they do not indicate whether it is getting better or worse. On the other hand, "India's rural-urban income gap has narrowed in recent years."[99] They explain that "rural-urban disparity in GDP per capita…characterizes overall inequality at national levels."[100] Evidence shows that rural areas are not necessarily left behind in terms of income. In Bangladesh, India, Thailand, and Vietnam, for example, "it can be inferred that, generally, the rural-urban income gaps of households at different distributional points have been narrowing in a number of Asian countries over time, for instance, owing to a reduction in the rural-urban wage gap over time."[101]

In addition, rural locales are less able to reap the benefits of globalization, should any exist for them in the first place. Research demonstrates that "rural areas tend to be less affected by the process of globalization—for instance, as a result of their geographical remoteness."[102] Indeed, those often less urbanized countries, which serve as sources of raw materials, only receive a fraction of the monetary value from the final products created from their natural resources. An oft-cited example is that for a typical cup of coffee sold in a Western country, the grower receives only 0.4 percent of the marginal revenue.[103] These days, this disparity occurs on a much larger scale and for a broader range of materials and items, resulting in less urbanized areas' remaining vulnerable. The Chinese economy is known as the factory of the world, and its demand for resources is so great that it "imports

the majority of Africa's mineral resources."[104] As far back as 2013, the UN Environment Programme stated that "China's growing affluence has made it the world's largest consumer of primary materials (such as construction minerals, metal ores, fossil fuels and biomass)."[105] In 2014, The Washington Post wrote about how China's "search for natural resources is having a huge impact on the rest of the world."[106] Yet, how many of the finished products, shipped to urban residents, end up putting money in the pocket of the communities where resources are extracted? There is growing evidence of an ongoing "rural-urban disparity" that relates to the historical disassociation between city residents and their negative environmental impact.

The legacy of colonialism continues to the present-day and influences how resource-supplying areas (likely former colonies) support industrial centers (often imperial powers) that are disconnected from their natural environment. Admittedly, influence by colonial powers over their former territories has declined over the past half-century. This is in part a result of globalization and the broadening of trade networks. This has led to a former colony no longer needing to depend on its former ruler as its primary economic market or trade partner. Looking at France, for example, Infante-Amate and Krausmann found that "colonial ties were very strong in the 1960s, but thereafter quickly diminished."[107] Yet, some elements of the colonial economic system persist today and shape the ongoing patterns of relations between countries. Trade is "still largely driven by primary commodities and natural resources, reflecting the persistence of the colonial development model where natural resource-endowed nations served as feedstock to advanced economies."[108] Historically, "Europeans created 'extractive institutions,' which endowed large powers to the state and transferred natural resources to colonizers."[109]

Colonialism, therefore, has contributed to the emergence of the inequality and power imbalances that exist in the present. There is a "colonial legacy of exploitation," Nwakalor explains in reviewing Galeano's *Open Veins of Latin America*.[110] This extends to environmental harm, as "colonialism underpins our global economic system, one predicated on overconsumption and disregard for planetary boundaries."[111] Colonialism brought further wealth to a number of today's most developed nations while simultaneously creating significant amounts of carbon emissions.[112] And today, colonialism's environmental legacy is also seen within not only changed landscapes, but also altered flora and fauna in different parts of the world.[113] The result is that urban beneficiaries of colonial pasts are largely unaware of the natural and human exploitation that forms the foundation of their way of life.

Overall, patterns of past colonialism continue to have influence today, thereby providing the foundation for some of the current patterns of trade. Urban beneficiaries of these systems are not always cognizant of how they profit from these past and present-day inequities. As the economic power of consumers in cities increase, people living there might become less aware of their connection to rural resource-providing areas.

Evidence of Cognitive Disconnection

There is deepening concern about the degree of separation between people and nature. While humankind's preeminence over other living beings is clear, it is necessary to recognize a core principle of sustainability—that all civilization and society is based upon the foundation provided by the natural world. Presently, "human connection with nature is widely believed to be in decline even though empirical evidence is scarce on the magnitude and historical pattern of the change."[114] In the U.S., this change in attitudes is most pronounced when comparing urban and rural areas. Using climate change concerns as a proxy, 80 percent of city residents say they are personally worried, as compared to 68 percent of those in rural areas.[115] The implication is that city residents would be less concerned about how their actions lead to remote environmental changes. At the same time, in the United States, there is a growing movement aiming for a re-engagement with the natural world. Hancock says that contact with nature is one way to get people to care more about preserving it.[116] However, if they live in cities, they may not have "nature contact" in the first place, as city living is associated with lessened contact with nature. In general, there may be a decrease in people's contact with nature, one that is further exacerbated when they live within cities.

CONCLUSION

This article has reviewed the linkages between human lifestyles and the environment. It explained how highly industrialized and urbanized societies are responsible for most natural resource use, provided evidence showing that capitalism's particular relationship with nature is harmful, and reviewed arguments supporting the contention that more urbanized societies have a greater disassociation from their environmental impacts. The evidence provided reveals the need to be concerned about the urbanization trend since it can separate us even more from nature. It is not clear, with the framework considering socio-political, economic, and cogni-

tive aspects, whether one area is clearly more important. Together, they contribute to city residents' disassociation from nature. No matter the country, and accounting for differing societal conceptions of connection to the broader world, there remains a disconnect between consumers and their resource use.

Going forward, what can be done? A potential solution to some of the problems of disconnection and disassociation can be found in the notions of spatial justice and environmental justice. Embracing the first would deepen our understanding of the uneven distribution of benefits and harms to different communities, while the second considers this from a "green" perspective. The latter is based on the principle that everyone, no matter their background and location, is deserving of environmental protection. If this were to be achieved, the requisite increase in awareness and improvement in safeguarding natural resources would take place where materials are sourced and, as with the supply chain, work its way upwards to consumers in industrialized countries. Simultaneously, city residents too need to actively increase their awareness, taking steps to overcome further separation from nature that comes with urban dwelling. ***f***

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