THE COSTS

OF

CONNECTION

How Data Is
Colonizing Human Life and
Appropriating It for Capitalism

NICK COULDRY AND ULISES A. MEJIAS

ADVANCE PRAISE FOR *THE COSTS OF CONNECTION*

"A provocative tour-de-force. A powerful interrogation of the power of data in our networked age. Through an enchanting critique of different aspects of our data soaked society, Nick Couldry and Ulises A. Mejias invite the reader to reconsider their assumptions about the moral, political, and economic order that makes data-driven technologies possible."

—danah boyd, Microsoft Research and founder of Data & Society

"There's a land grab occurring right now, and it's for your data and your freedom: companies are not only surveilling you, they're increasingly influencing and controlling your behavior. This paradigm-shifting book explains the new colonialism at the heart of modern computing, and serves as a needed wake-up call to everyone who cares about our future relationship with technology."

—Bruce Schneier, author of *Click Here to Kill Everybody: Security and Survival in a Hyper-Connected World*

"This book is a must-read for those grappling with how the global data economy reproduces long-standing social injustice, and what must be done to counter this phenomenon. With a feast of insights embedded in visceral historical and contemporary illustrations, the authors brilliantly push the reader to rethink the relations between technology, power, and inequality."

—Payal Arora, author of *The Next Billion Users: Digital Life beyond the West*

THE COSTS OF CONNECTION

CULTURE
AND
ECONOMIC
LIFE

THE COSTS OF CONNECTION

How Data Is Colonizing Human Life
and Appropriating It for Capitalism

NICK COULDRY AND ULISES A. MEJIAS

Contents

This page intentionally left blank

Preface

Colonized by Data

The telegraph pole, the Christian cross, and the rifle arrived all at once for the Bororo people of Mato Grosso. The rifle of the soldier and the settler served to seize the Bororo's land in the name of industry and progress, the cross "pacified" and "civilized" them, and the telegraph integrated them into the rest of the newly wired Brazilian republic in the mid-nineteenth century.[1] Some Bororo donned western clothing and moved from communal to single-family dwellings, as the priests told them to do. They learned the settlers' language and were put to work on the construction of the national telegraph network.

Such history is what comes to mind when most of us think of colonialism. Yet we know that the effects of colonialism continue to be felt, as indigenous people even today resist dispossession, cultural invasion, and genocide. Consider next another starting point, the Idle No More movement, a campaign by indigenous peoples in Canada to protect their ancestral resources.[2] Like many activist movements, Idle No More has become a smart user of social media to promote its cause and enlist supporters. The telegraph pole used to link the Bororo into networks of colonial power has given way to a tool on which even the victims of colonization would now seem to depend. Nonetheless, the implications of such tools are, at best, ambiguous. Reflecting on the use of social media during the campaign's protests, Leanne Betasamosake Simpson, a scholar, writer, and artist of the Nishnaabeg people, wrote that "every tweet, Facebook post, blog post, Instagram photo, YouTube video, and email we sent during Idle No More made the largest corporations in the world . . . more money to reinforce the system of settler colonialism. . . . I wonder in hindsight if maybe we didn't

build a movement, but rather we built a social media presence that privi-
leged individuals over community, virtual validation over empathy, lead-
ership without accountability and responsibility."³

Consider now a third starting point—the question that Irish novel-
ist Sally Rooney, dubbed "the J. D. Salinger of the Snapchat generation,"
recently asked herself: "Why wasn't I drinking enough water?"⁴ Follow-
ing a series of fainting spells, doctors advised her to increase her hydra-
tion because, like many busy people, she sometimes forgets to take a water
break. Fortunately, as the cliché goes, there's an app for that. The makers of
WaterMinder offer a program to bypass the part of the brain that regulates
thirst, reminding you to drink regularly to meet predefined quotas while
tracking your progress. Like many apps, the program claims to turn what
would otherwise be an insignificant private act into a social celebration,
allowing you to earn achievements that you can share with your friends.
"Makes water fun again," wrote a reviewer of the app.⁵

The continuity between the first and second starting points is clear, but
what of the third? It might seem counterintuitive to imagine that colonial-
ism's sites of exploitation today include the very same West that histori-
cally imposed colonialism on the rest of the world. But what if the armory
of colonialism is expanding? What if new ways of appropriating human
life, and the freedoms on which it depends, are emerging? That is the dis-
turbing possibility that we explore in this book.

Let's look at Sally Rooney's story again. The simple, daily act that ev-
ery individual body does of monitoring whether it has drunk enough wa-
ter has suddenly become something that happens in a competitive social
space. The human body has been reworked into something that requires
a distant infrastructure, from which, incidentally, profit can be made. In
Rooney's own words, "I have contracted out one of the essential functions
of my body to a piece of software." But this is just one small example of
something much bigger: the systematic attempt to turn all human lives
and relations into inputs for the generation of profit. Human experience,
potentially every layer and aspect of it, is becoming the target of profitable
extraction. We call this condition *colonization by data*, and it is a key di-
mension of how capitalism itself is evolving today.

If colonialism is the problem, you may be thinking, *Isn't the solution as simple as calling for the internet to be decolonized, liberating us all?* After all, there have been calls to decolonize everything from schools to museums and ways of thinking. But uttered too easily, such calls risk making anyone and everyone into *metaphorical* subalterns, serfs, or slaves of Silicon Valley. Such metaphorical complaints leave intact the *social and economic order* that colonialism comprises at its core. It is not enough to "play Indian."[6] As Eve Tuck and K. Wayne Yang remind us, colonization "is not an approximation of other experiences of oppression"[7] but a highly distinctive exercise of power.

Our argument in this book—that human life is being colonized by data and needs to be decolonized—is no approximation. We are not playing Indian. There is nothing metaphorical about the new era of coloniality that we will describe. By tracing continuities from colonialism's historical appropriation of vast territories, such as contemporary Brazil, all the way to data's role in contemporary life, we suggest that although the modes, intensities, scales, and contexts of today's dispossession are distinctive, the underlying function remains the same as under historical colonialism: to acquire large-scale resources from which economic value can be extracted.

If historical colonialism annexed territories, their resources, and the bodies that worked on them, data colonialism's power grab is both simpler and deeper: the capture and control of *human life itself* through appropriating the data that can be extracted from it for profit. If that is right, then just as historical colonialism created the fuel for industrial capitalism's eventual rise, so too is data colonialism paving the way for a capitalism based on the exploitation of data. Human life is quite literally being annexed to capital.

Some Signposts

This book's argument will therefore be a double one. Our first assertion is that our everyday relations with data are becoming colonial in nature; that is, they cannot be understood except as an appropriation on a form and scale that bears comparison with the appropriations of historical colonial-

ism. Our second argument is that this new colonialism does not just happen by itself but is driven by the imperatives of capitalism. Whereas the relations between historical colonialism and what emerged as industrial capitalism became clear only after centuries, the new data colonialism occurs against the background of centuries of capitalism, and it promises to take familiar aspects of the capitalist social and economic order to a new and more integrated stage, a stage as yet too new to reliably name.

Three further aspects of our argument about data colonialism and its relation to capitalism's evolution must be noted at the start. One is that none of this would be possible without radical changes over the past thirty years in communication infrastructures, specifically the embedding of computer systems in human life at many levels. This book's analysis of data colonialism and capitalism's evolution takes very seriously the transformative role of information technologies and the resulting new infrastructures of connection. The second point is that such technological transformation does not change human life by merely existing. Technologies work, and have consequences for human life, only by being woven into what people do, where they find meaning, and how their lives are interdependent. Data colonialism requires the creation of a new *social and economic order* that is potentially as enduring as the order that enabled capitalist market societies from the nineteenth century onward. The third point concerns how the power relations generated by this emerging order work: data colonialism appropriates not only physical resources but also our very resources for *knowing* the world. This means that economic power (the power to make value) and cognitive power (the power over knowledge) converge as never before. Therefore, what is happening with data can be fully understood only against the background not just of capitalism but of the longer interrelations between capitalism *and colonialism*. The exploitation of human life for profit through data is the climax of five centuries' worth of attempts to know, exploit, and rule the world from particular centers of power. We are entering the age not so much of a new capitalism as of a new interlocking of capitalism's and colonialism's twinned histories, and the interlocking force is data.[8]

What do we mean by *data*? If a shopping list is scribbled on a piece of paper, we don't mean that. But if the list is entered on a mobile phone, per-

haps on Google's Keep app, then we do mean that. Furthermore, if we consider the algorithms that collect information across all users of Keep to see what people are making lists of, we definitely mean that. For our very specific purposes, the concept of *data* cannot be separated from two essential elements: the external infrastructure in which it is stored and the profit generation for which it is destined. In short, by *data* we mean information flows that pass from human life in all its forms to infrastructures for collection and processing. This is the starting point for generating profit from data. In this sense, data abstracts life by converting it into information that can be stored and processed by computers and appropriates life by converting it into value for a third party.

This book introduces quite a few other concepts and neologisms, which are explained in detail as the chapters unfold. It might be useful, however, to provide some basic definitions and explain their relationships right at the beginning. *Data colonialism* is, in essence, an emerging order for the appropriation of human life so that data can be continuously extracted from it for profit. This extraction is operationalized via *data relations*, ways of interacting with each other and with the world facilitated by digital tools. Through data relations, human life is not only annexed to capitalism but also becomes subject to continuous monitoring and surveillance. The result is to undermine the autonomy of human life in a fundamental way that threatens the very basis of freedom, which is exactly the value that advocates of capitalism extol. These fundamental transformations of human life have dramatic consequences for the social world too. They enable what we call *social caching*, a new form of knowledge about the social world based on the capture of personal data and its storage for later profitable use. As social relations are thus transformed, we see the emergence of the *Cloud Empire*, a totalizing vision and organization of business in which the dispossession of data colonialism has been naturalized and extended across all social domains. The Cloud Empire is being implemented and extended by many players but primarily by the *social quantification sector*, the industry sector devoted to the development of the infrastructure required for the extraction of profit from human life through data.

For now, the good news is that these transformations are in their early stages. That is why an awareness of the historical roots of today's trans-

formations is so vital. We must respect the uniqueness of the struggles of historically colonized peoples, but that doesn't mean we can't learn from them. Today's attempt to extract economic value from human lives through data has a systematic integration and depth that we argue is, in some respects, without historical precedent. But we see its features most clearly through their continuity with past relations between colonialism and capitalism. We fail to learn from that history at our peril.

Introducing the Social Quantification Sector

Some of the main actors in these transformations are already familiar. As just mentioned, we call them the social quantification sector. This sector has been growing for a long time, in part through marketers' accumulation of consumer data, such as credit card data, which began in the 1980s.[9] In the past fifteen years, however, the social quantification sector has achieved a new depth and complexity.

This sector currently includes the manufacturers of the digital devices through which people connect. By this we mean not just well-known media brands such as Apple, Microsoft, and Samsung but also the less-well-known manufacturers of "smart" (that is, internet-connected) fridges, heating systems, and cars through which we never imagined we would communicate. Still less did we imagine that, in the quickly expanding Internet of Things, such devices would communicate with other devices about us. The sector also includes the builders of the computer-based environments, platforms, and tools that enable us to connect with and use the online world, including household names such as Alibaba, Baidu, Facebook, Google, and WeChat. There is also the growing field of data brokers and data processing organizations such as Acxiom, Equifax, Palantir, and TalkingData (in China) that collect, aggregate, analyze, repackage, and sell data of all sorts while also supporting other organizations in their uses of data. And, finally, the social quantification sector includes the vast domain of organizations that increasingly depend for their basic functions on processing data from social life, whether to customize their services (like Netflix and Spotify) or to link sellers and buyers (like Airbnb, Uber, and Didi).

Beyond the social quantification sector is the rest of business, which has also been transformed in the "great data transition."[10] Much of what ordinary businesses now do is crunch data from their internal processes and from the world around them; most businesses also depend increasingly on the work of the social quantification sector to target their ads and marketing. And beyond that is the vast array of everyday contexts in which people are integrating the outputs of that sector into daily life. The Cloud Empire is the larger outcome of this combined growth of the social quantification sector and data practices right across business and social life.

A few words of clarification about the term *social quantification sector* are needed. When we say *social quantification sector*, we use the word *social* to refer to that constantly changing space of relations and interconnections on which the quality of human life depends but whose meaning is endlessly contested in political and civic struggle.[11] When we use the word *social*, we do not necessarily mean a well-ordered or well-integrated way of living together. For at issue in this whole transformation is precisely the *quality* of life that human beings will have together in the new capitalist social order. The capture of personal data through social caching and its storage for later profitable use—normal today but two decades ago barely imaginable—has major implications for our quality of life as human beings.

Social caching is often hidden from users of platforms and internet services under a veneer of convenience ("To use this app, you must first . . ."). Stripped of that veneer, the deal looks rather different. A key consequence of connecting with others in the era of data colonialism is submission to the continuous tracking of human life, a process known until recently as surveillance. As a leading computer-security expert, Bruce Schneier, put it, "The primary business model of the internet is based on mass surveillance."[12] The all-seeing authoritarian state was a standard topic of twentieth-century literary dystopias (from Kafka to Orwell),[13] but Schneier points to an even bigger problem: the building into corporations' *routine* operations of processes that conflict, as surveillance always has, with basic freedoms such as autonomy. The tracking of human subjects that is core to data colonialism is incompatible with the *minimal integrity of the self* that underlies autonomy and freedom in all their forms.

This was the deeper meaning of Edward Snowden's revelations of US and UK security services' data-gathering in 2013. Suddenly, citizens became aware that today's pervasive state surveillance would be impossible without the continuous social-caching operations of commercial corporations.[14] Since then, fears of a new "corporate governance of everyday life" have been growing.[15] But other fears have started to overtake them, including the "fake news" scandals that have gripped politics since late 2016 in the United States, United Kingdom, and elsewhere. There are also fears that, because of polarizing forces online, "social media is ripping society apart";[16] fears from other commentators of a social dystopia driven by platforms' search for advertising income;[17] and, finally, the fear that the targeting of news via social media platforms represents "the most lethal political weapon ever invented."[18] Calls for the regulation of social media platforms and other information technology giants are becoming familiar.[19] But none of these highly charged debates answers the underlying question on which this book will focus: *should human beings in the twenty-first century accept a world in which their lives are unceasingly appropriated through data for capitalism?*

Colonial Echoes

This is where the long history of colonialism's entanglement with capitalism helps us move beyond the sound and fury of contemporary scandals and grasp the longer pattern of resource appropriation that gives shape to today's developments. Long before Karl Marx identified it as a force in the world, capital was already expanding in the sixteenth century, in the period most commonly identified with historical colonialism and the emergence of the Spanish, Portuguese, and British empires. Capital was acquiring new territories from which to extract resources and new bodies from which to extract labor. Those close relations between colonialism and capitalism (indeed, between colonialism and modernity in general)[20] are important to our story; they help us grasp what is distinctive about the current expansionary phase of capitalism.

What do we mean by *expansionary*? Capitalism has been expanding from the start, in the sense of exploiting new resources, finding new ways

of making profit, and finding new markets. But until recently, this expansion has been based on the exploitation of human production through labor relations, as classically theorized by Marx, resulting in the ever-greater transformation of physical nature as an input to capitalism. But the appropriation of human life in the form of data (the basic move that we call data colonialism) generates a new possibility: without ending its exploitation of labor and its transformation of physical nature, capitalism *extends* its capacity to exploit life by assimilating new or reconfigured human activities (whether regarded as labor or not)[21] as its direct inputs. The result, we argue in chapter 1, is the expansion of the practical scope of capitalist exploitation, but in ways that can be linked back to Marx's own sense of capitalism's expansionary potential. In this emerging form of capitalism, human beings become not just actors in the production process but raw material that can be transformed into value for that production process. Human life, in the form of profitably abstracted data, becomes more like the seed or manure that Marx noted became factors of capitalist production, having once just been part of human beings' cycle of interaction with the land.[22] This transformation of human life into raw material resonates strongly with the history of exploitation that preceded industrial capitalism—that is, colonialism.

The very concept of raw material has deep colonial roots. *Raw*, in this context, means available for exploitation without resistance rather than a substance that needs no processing. The natural environment itself first had to be reconstructed so that it became available for value extraction.[23] Then, through the practice of slavery (which preceded colonialism but which reached a massive scale under colonialism), human bodies were transformed into a raw material for capitalism in the form of slaves. Historians have warned us against treating slavery—usually imagined as a premodern practice—in isolation from the development of industrial capitalism. The plantation and the factory coexisted for a long time.[24] The treatment of human beings as mere property stimulated the rationalities of profit maximization, accounting precision, and data optimization that we now tend to associate with modern rationality.[25] Here is an eloquent description by the historian of the capitalist slave plantation, Edward Baptist:

So push a button (with the index finger of your *right* hand) on the machine of the trading world, and things happen to benefit the man with sterling bills, a huge pile of cotton, a long roster of slaves, abundant credit that allows him to extend his reach across time and space.[26]

What if comparable processes for abstracting human life are today enabling new, extended forms of economic extraction? Human data is not actually raw,[27] but business often imagines it is. Human life first needs to be configured so as to "naturally" generate a resource such as data. Momentary data about one individual's actions or properties is worthless unless it can be combined with data about *other* individuals, actions, moments, and properties to generate relations between data points,[28] and that is why an infrastructure has been built to ensure this. The world of internet-based connection *is* a world in which new types of corporate power, with privileged access to data streams extracted from the flow of life, can activate a metaphorical button—an apparatus of extraction, whether platform, app, or AI system—that reconfigures human life so that it contributes continuously to the collection of data and thereby, potentially, to the generation of profit.

The result of such data relations is certainly not a new slavery, since nothing can compare to the terrible violence of that institution (the practice of "distinguish[ing] every bad thing by the name of slavery" was already criticized by Frederick Douglass in the mid-nineteenth century).[29] But that should not blind us to what remains a disturbing line of continuity: as happened historically, but under new conditions, human life today is becoming the object of appropriation for extraction and, in the process, enabling capitalism to move to a still higher scale and integration of operation. Our intent is not to make comparisons to the detailed contents or form of historical colonialism but to focus on colonialism's enduring *function*, which we see as enacting illegitimate appropriation and exploitation and as redefining human relations so that the resulting dispossession comes to seem natural. It is such continuities that the term *data colonialism* enables us to grasp.

What Is Data Colonialism?

More explicitly defined, *data colonialism* is our term for the extension of a global process of extraction that started under colonialism and continued through industrial capitalism, culminating in today's new form: instead of natural resources and labor, what is now being appropriated is human life through its conversion into data. The result degrades life, first by exposing it continuously to monitoring and surveillance (through which data is extracted) and second by thus making human life a direct input to capitalist production. Data colonialism is, in other words, an emerging order for appropriating and extracting social resources for profit through data, practiced via data relations. Unlike historical colonialism, whose vast profits helped create the preconditions for what we now know as industrial capitalism, data colonialism emerges against the backdrop of the entire intertwined history of colonialism and capitalism. This means that the basic colonial move of appropriating data from human life (data colonialism) works hand in hand with social arrangements and technological infrastructures, some that emerged during earlier capitalism and some new, that enable that data to be transformed into a commodity, indeed, a direct input to contemporary capitalist production.

Although the site of data colonialism that we most often notice is the social quantification sector, and particularly the personal data extraction practiced by social media platforms, the basic extractive principles underlying data colonialism have been gestating in the business methods of modern capitalism for three decades. The original context was industrial capitalism's progressive globalization in the late twentieth century through trade liberalization and extended supply chains as well as its financialization through an explosive growth of debt (both corporate and personal) and the acceleration of global capital flows. In this general context, the information infrastructures emerged that enabled people and processes to be connected to each other under conditions that facilitate data extraction.[30]

Take an example far from social media: the discipline of logistics. The goal of logistics is to use continuously connected data flows to organize

all aspects of production across space and time within global commodity chains.[31] It was enabled, decades before social media, by software inventions such as the relational databases that help businesses find patterns in huge data flows across diverse sources and locations.[32] If logistics aims to rationalize production, the recent growth of the Internet of Things (IoT) aims to incorporate consumption—what we do with products after we buy them—into an extended chain of profit extraction through the processing of data.[33] The bigger vision of the IoT, and of data colonialism as a whole, has been expressed by a company normally seen as the enemy of the entrepreneurs who built social media platforms—IBM. By turning the human environment into a network of listening devices that capture data about all activities, IBM suggests that they can "liquify" areas previously inaccessible to capital. The company put it this way: "Just as large financial marketplaces create liquidity in securities, currencies and cash, the IoT can liquify whole industries, squeezing greater productivity and profitability out of them than anyone ever imagined possible."[34] In this view, every layer of human life, whether on social media platforms or not, *must* become a resource from which economic value can be extracted and profit generated. The processing power of artificial intelligence is a key tool in all these developments.

Far from being a feature of the West only, the growth of the social quantification sector, logistics, and the IoT in the context of rapidly expanding uses of artificial intelligence is a core development and policy goal in China too.[35] The social quantification sector emerges as an arena of commercial and geopolitical competition between the West (particularly the United States) and China.

We can capture the core of our double argument most succinctly by characterizing data colonialism as *an unprecedented mutual implication of human life and digital technology for capitalism*. None of this would have been possible without the emergence in the past three decades of a radically new technological infrastructure for connecting humans, things, and systems, known generally as the internet. We have written this book because it is time to count the *costs* as well as the much-proclaimed benefits of such connection for human life.

The Book's Structure at a Glance

In telling the story of this double transformation (a new colonialism and an extended capitalism), our goal is to equip readers to better see the world that is being built for them and to imagine a different one.

Chapter 1 lays out our argument's foundations: the concepts of data colonialism and capitalist data relations, their contextualization within the twinned histories of capitalism *and* colonialism, and capitalism's recent turn toward the capitalization of human life itself. We will explain how much recent critique of data trends misses two crucial ingredients: the radically reconfigured social world that computer-based connection makes possible and the unprecedented fact that the emerging colonial/capitalist power structure has at least two poles of power in what, until now, we have called the West and in China (with India an important player over the longer term).

Chapter 2 then explains in more detail the workings of the social quantification sector as an economic and organizational transformation within the emerging larger formation of the Cloud Empire. We will map out the relations between the multiple ways in which data is transforming the capitalist economy on the basis of data colonialism's fundamental mode of appropriation. An interlude is offered following chapter 2 for readers who might need a quick overview of colonialism and the critical and theoretical responses to it. Chapter 3 places our overall analysis in the context of the much longer history of *colonial* appropriation, demonstrating the hidden patterns that get missed until we look at the contemporary era through a colonial lens. As a result, we see the recent rise of data as a mode of social and economic ordering within the much longer perspective that decolonial theorists have called *coloniality*: the long-term skewing of the world's economic-resource distribution in favor of particular types of power formations and the justification of this skewing by an equally biased distribution of knowledge resources, loaded until very recently in favor of the "West."

The next two chapters build on the framework established in the first three chapters to examine more closely the social order emerging from

data colonialism and what it means for human beings and their quality of life everywhere. Chapter 4 asks what is happening to the social domain in datafied societies and, in particular, what is happening to our knowledge of the social world as it becomes transformed by data relations. Data-driven changes to social knowledge also have major implications for injustice and inequality in the social world. Chapter 5 turns to the implications of data colonialism for the very nature of human subjecthood and specifically for human autonomy. Autonomy may be a compromised concept in some forms, but it is one we cannot do without, because it provides the normative basis for resisting the violence of data relations. Without the notion of autonomy, and in particular the minimal integrity of the self that underlies it, democracy and freedom in *any* form would make little sense.

Chapter 6 brings the book's threads together, assessing where data colonialism and the capitalization of life are likely to head in the foreseeable future and what type of larger social order/disorder this will entail. From there, a postscript suggests ways to imagine forms of human connection that may be free of the costs of data colonialism's regime and to begin orienting ourselves toward possible strategies for resisting data colonialism on the ground.

This book is an attempt to disentangle a historical moment of great complexity. As the first subjects of an emerging data colonialism, we can make sense of this complexity only within the much longer history of colonialism and capitalism. We also need to do a considerable amount of interpretative and analytical work across today's societies and economies. In writing this book, we have been fortunate enough to build on much excellent work within the past decade that has begun to uncover the shape and dynamics of human life's appropriation through data.[36] But in searching for a larger theoretical framework to make sense of the whole sweep of these developments—the framework of data colonialism—we have had to forge some new connections and take an eclectic path in terms of theory. Rather than positioning our argument exclusively within Marxism, postcolonialism, Foucauldian analyses of biopolitics, or critical-information science, our aim is to put these perspectives into conversation, taking the best from each to forge a new starting point adequate to today's complex transformations and their hidden violence.

We hope that, like us, you will find worthwhile the effort to trace the "inner connection"[37] of what is happening with data. It is now urgent to better understand the hidden and not-so-hidden costs of something human beings have until now generally seen as good: connection. Only from better understanding can come the chance of resisting today's terms of connection and the forging of better ones.

This page intentionally left blank

THE COSTS OF CONNECTION

This page intentionally left blank

Part I

Extracting

This page intentionally left blank

The Capitalization of Life without Limit   1

"THIS IS WHAT MODERN COLONIALISM LOOKS LIKE." So tweeted Christopher Wylie, the whistle-blower who kicked off the Facebook/Cambridge Analytica scandal in March 2018.[1] Wylie was referring to Cambridge Analytica's plans to expand its operations in India for using social media targeting to influence the political process there. But the scale and scope of data colonialism is much wider than the malfeasance of a few overweening data marketers and their in-house psychologists. It extends much wider even than Facebook's normal practices of data extraction and data licensing that the scandal opened to view.

Yet the scandal was important. It was as though a side deal by Facebook with independent data prospectors had accidentally left open a hole in the ground that allowed the general public, for the first time, to see clearly into an underground anteroom. There, in that anteroom, visible for all to see, was the entrance to social media's real data mine, although few understood exactly what lay behind that subterranean door in Facebook's exclusive domain, let alone the planetary scope of capitalism's data mining. The long-anticipated "techlash" had begun but, as yet, without a map of the wider pattern of exploitation, whose traces had suddenly become visible.

The concept of *data colonialism* helps us draw that map. In this chapter, we unpack further what this term involves and outline its relation to capitalism and to the new social order that is stabilizing in and through cap-

italism. Along the way, we will also explain certain other key concepts, such as *platform* and *data relations*, while clarifying the similarities and differences that our argument has with other recent analyses of the digital era, for example, the huge recent commentary on the exploitation of digital labor.

To start, we must recall what made historical colonialism distinctive. Colonialism was a form of economic and social organization dominated by major colonial powers such as Britain, France, Spain, and later the United States. It is now usually regarded as historically closed, ended by the decolonizing movements of the later twentieth century, although in politics and other areas, neocolonial forms of power live on (a more detailed discussion of historical colonialism can be found in the interlude following chapter 2). Our interest in this book is in the continuities from that older colonialism to a new form of colonialism—data colonialism.

There were four key components to historical colonialism: the appropriation of *resources*; the evolution of highly unequal social and economic *relations* that secured resource appropriation (including slavery and other forms of forced labor as well as unequal trading relations); a massively unequal global *distribution of the benefits* of resource appropriation; and the spread of *ideologies* to make sense of all this (for example, the reframing of colonial appropriation as the release of "natural" resources, the government of "inferior" peoples, and the bringing of "civilization" to the world).

In describing the transformations underway today as data colonialism, we use the term *colonialism* not because we're looking for a metaphor but because it captures major structural phases within human history and specifically within capitalism. Colonialism has *not* been the standard reading of what is changing in contemporary capitalism.[2] Yet it is becoming increasingly clear that capitalism's current growth cannot be captured simply in terms of ever-more ambitious business integration or the ever-expanding exploitation of workers. Some have characterized today's developments as increasing waves of "accumulation by dispossession," a feature characteristic of capitalism throughout its history.[3] But even this fails to grasp how the *axis* of capitalism's expansion has transformed, through a shift in the supposed "raw material" that capitalism aspires to get under its control.

The discovery of new forms of raw material is what makes the current moment distinctively colonial. If historical colonialism expanded by appropriating for exploitation geographical territory and the resources that territorial conquest could bring, data colonialism expands by appropriating for exploitation ever more layers of *human life itself*. Regarding data colonialism, much debate on contemporary capitalism has been sidetracked by an excessive focus on whether digital labor is being exploited,[4] a significant topic, certainly, but not the most important feature of today's transformations. We will show how data colonialism appropriates many specific aspects of human life—from work to school, from health treatment to self-monitoring, and from basic forms of sociality to routine economic transactions, plus the grid of judgment and direction that we call "governance." When we refer to data practices as colonizing human life, we refer to the appropriation of data, potentially for profit, in any and all of these areas. But we also intend the term *human life* to refer to the as-yet-still-open horizon of exploitation over which data colonialism claims future rights: as ever more of our activities and even inner thoughts occur in contexts in which they automatically *are made ready for* appropriation as data, there is, in principle, no limit to how much of human life can be appropriated and exploited. In this way, Marx's core insight into the expansionary potential of capitalism is actualized in circumstances that Marx himself could not have anticipated.

To be clear, it is not the mere appropriation of data that is colonial. An individual can imagine appropriating the "data stream" of her own life and using it for her own purposes; she can also imagine agreeing to the appropriation of, say, some of her health data by medical professionals for purposes she approves of and on terms that she wholly controls. But these are not typical of the cases we will discuss. Data colonialism is concerned with the external appropriation of data on terms that are partly or wholly beyond the control of the person to whom the data relates. This external appropriation is what makes possible such data's exploitation for profit.

This progressive opening up of human life to externally driven data extraction is what we mean by the capitalization of human life *without limit*. In this phrase, we recognize Marx's long-standing insight that capitalism has always sought to manage human life for the maximization of profit; at

the same time, we emphasize that data colonialism absorbs new aspects of human life streams directly into the productive process. It is not that social limits to life's capitalization can no longer be imagined—indeed, the whole point of this book is to argue for the necessity of such limits—but that, as things currently stand, much corporate discourse fails to recognize any limits except those that it sets itself. The result of this convenient failure is not just to renew colonialism but also to expand the scope of capitalism too, that is, the capitalism developed on the basis of historical colonialism. Through data colonialism, contemporary capitalism promises to consume its last remaining "outside," dispossessing human subjects of their capacity as independent sites of thought and action. *Resisting* data colonialism becomes the only way to secure a human future not fused indissolubly with capitalism, indeed, the only way to sustain the value that capitalism claims to promote: human freedom.

The Dimensions of Data Colonialism

Today's technological infrastructures of connection are varied. They include digital platforms such as Facebook and Alibaba that we are familiar with, the whole mass of corporate intranets, and any detailed interfaces for linking up persons, things, and processes for data transfer. Infrastructures of connection enable data colonialism to be more subtle than historical colonialism in how it appropriates resources. Historical colonialism appropriated territories and bodies through extreme physical violence. Data colonialism works through distinctive kinds of force that ensure compliance within interlocking systems of extraction in everyday life.[5] These systems are so many and, taken together, so encompassing that they risk governing human beings in just as absolute a way as historical colonialism did.

Colonizing Resources: The World as Input to Capital

Data colonialism appropriates for profitable exploitation a resource that did not begin to be universally appropriated until two decades ago: data. According to an authoritative definition, data is the "material produced by abstracting the world into categories, measures and other representational forms . . . that constitute the building blocks from which information and

knowledge are created."[6] More than that, human life, and particularly human social life, is increasingly being constructed *so that* it generates data from which profit can be extracted. In doing so, ever more of life is required to be continuously monitored and surveilled, removing the boundaries that previously existed between internal life and external forces. In this double sense, human life is appropriated through data, becoming something else, a process tied to external processes of data extraction.

Capitalism can exploit any number of data sources. Any computer, any device with an embedded computer, or any entity readable by a sensor with computing power can generate data for this purpose. Data sources may be processes, things, or people as well as the interactions between any of these sources. The extraction of value from data is equally indifferent to its origin. Capitalism as the systematic organization of value extraction has only one goal in relation to data—to maximize the production of value through data extraction—and so in principle cares little about the sources and types of data exploited.[7]

Contemporary possibilities for data extraction derive from connection between computers. The demand for human beings and things to "connect" is common ground between corporations in the West and the East. Facebook's emphasis on the value of connection is well-known: Zuckerberg, ahead of Facebook's first public share offering, wrote to investors that Facebook "was not originally created to be a company" but "to make the world more open and connected." The 2017 open letter by "Pony" Ma Huateng, CEO of the Chinese company Tencent, is clearer, however, on what is at stake for the wider society: "With the full digitization of the entire real economy and society, we not only need to reduce 'islands of information' through more connections, but also need to achieve continuous optimization of communication and collaboration through better connections."[8] Connection, in other words, generates *societies and economies* that are integrated and ordered to an unprecedented degree.

Data expands the production resources available to capital. If, following Marx, we understand capital not as static accumulations of value and resource but as "value in motion,"[9] then the appropriation of data enables new ways of forming capital through the circulation and trading of informational traces (data). But the trading of data is only part of a larger

change whereby capital comes to relate to the whole world, including the worlds of human experience, as its extractive resource. "It seems to me we have squeezed all the juice out of the internal information," said the CEO of US data company Recorded Future.[10] The resulting move to external data sources has changed the rationale of business while seemingly making "organizations smarter and more productive." Human beings cannot remain unaffected since, in the words of Thomas Davenport, a leading US analyst of the data business, "Human beings are increasingly sensored," and "sensor data is here to stay."[11] Sensors can sense all relevant data at or around the point in space where they are installed. "Sensing" is becoming a general model for knowledge in any domain, for example, in the much-vaunted "smart city."[12]

Sensors never work in isolation but are connected in wider networks that cover ever more of the globe. All business relations get reorganized in the process, and new types of business (for selling and controlling data flows and for managing the new infrastructure of data processing and data storage) become powerful. This affects all types of business, not just social media platforms. As one business manager put it, "We make more money selling data to retail data syndication firms than we do selling meat."[13] It is all too easy to see this as simply a shift within capitalism's modes of operation while forgetting that the cost is always the expansion of surveillance regimes that intrude on the autonomy of human beings. As we show in detail in chapter 5, all notions of autonomy, until now, have assumed that individuals have access to a minimal space of the self that is its space of becoming. But the goal of continuous data appropriation intrudes on this space and changes humanity's relations to external infrastructures decisively, erasing, potentially forever, the boundary between the flow of human experience and the environment of economic power that surrounds it.

Operationalizing this move, however, is not simple. First, there is the question of how economic value can be extracted from data. Data can be sold directly, used to enhance the value of sold advertising, or integrated into the organization of other product streams or into production generally. But it is no part of our argument to claim that extracting value from data is automatically successful, only to argue that the goal of doing so is

increasingly the goal of business. The impact, however, on how business talks about itself has been profound.

When it comes to access, and this is the second complexity, contemporary business tends to *talk* about data as though it was "just there," freely available for extraction and the release of its potential for humankind. In the history of colonialism, a similar claim was expressed in the legal doctrine of *terra nullius*, land such as the territory now known as Australia that supposedly belonged to "no one" (*nullius*).[14] Today's equivalent metaphor is data as the "exhaust" of life processes.[15] Data is assumed to just be there for the taking:

> Verizon Wireless . . . is no different from other wireless carriers in having a great deal of information about its customer movements. All wireless phones broadcast their location . . . in radio signals, and all carriers capture the information. Now . . . Verizon is selling information about how often mobile phone users are in certain locations and their activities and backgrounds. Customers thus far have included malls, stadium owners, and billboard forms.[16]

But such claims are constructions of how the world is and should be. Meanwhile, the exploitation of data, now that the world has been found to be full of it, is becoming increasingly sophisticated. The use of data analytics is central to whole economies, including cultural and media production once focused mainly on the content itself.[17] Davenport distinguishes three phases in the development of data analytics: whereas early analytics was essentially "descriptive," collecting companies' internal data for discrete analysis, the period since 2005 has seen the emergence of the ability to extract value from large unstructured and increasingly diverse external and internal data sets through "predictive" analytics that can find patterns in what appears to have no pattern. Today's "analytics 3.0" uses large-scale processing power to extract value from vast combinations of data sets, resulting in a "prescriptive analytics" that "*embed[s]* analytics into every process and employee behavior."[18] Once the world is seen by capitalism as a domain that can *and so must* be comprehensively tracked and exploited to ensure more profit, then all life processes that underlie the production process (thinking, acting, consuming, and working in all its dimensions and preconditions) must be fully controlled too. This principle, made pos-

sible by technological connection, is the engine that drives the capitalization of human life in its twenty-first-century form, and its remit goes much wider than social media platforms.

Yet the internet was developed against the background of the values of freedom and human cognitive enhancement characteristic of the US counterculture of the 1960s.[19] Unsurprisingly, there has been some pushback against capitalism's apparent new dependence on extracting data from human life. Surveillance is not obviously a benefit to citizens (except as a temporary means to counter serious threats), so it must be repackaged or disguised. Here is the source of data colonialism's most interesting contradictions. It is eerie but not uncommon to find the language of personal freedom melded with the logic of surveillance, as in the motto of facial-recognition software manufacturer, Facefirst: "Creating a safer and more personalised planet through facial recognition technology."[20] Google, meanwhile, is marketing Nest Hello, a video doorbell that includes facial-recognition technology, and Amazon has its own facial-recognition service called simply Rekognition. In China, facial-recognition software is becoming the cool new way for customers to pay for fast food and a (less cool!) way for city authorities to monitor public spaces.[21] But elsewhere, unease at the implications of facial recognition for democracy is growing.

As though in response, Apple, which makes vast profits through a walled garden of devices, proclaims its refusal to collect data on users via those devices.[22] Yet Apple tracks its users for many purposes and so does not contradict the trend of data colonialism, except that its business model does not generally depend on the sale of this data. Indeed, Apple receives substantial sums from Google for allowing it privileged access to iPhone users.[23] A controversy developed when Apple's iOS and MacOS systems were shown to collect information on user location and search activity. Apple's subsequent Privacy Policy states that collected data "will not be associated with [a user's] IP address,"[24] yet iPhone features still support the surveillance needs of marketers. Both the iBeacon service and the iPhone's built-in Wallet app enable push notifications from marketers.[25]

Responsiveness to surveillance concerns is a selling point for other players too, at least outside China. WhatsApp distinguishes itself by its end-to-

end message encryption, while Snapchat has its posted messages disappear, at least from the users' view, after a short period. But the actual position is more complex. Although WhatsApp claimed it was "built . . . around the goal of knowing as little about you as possible," a company blog post following WhatsApp's $19 billion acquisition by Facebook admitted that its logbook of customer phone numbers would become connected with Facebook's systems, an admission that led to a European Commission fine for Facebook and a string of legal challenges.[26] WhatsApp's own terms now make clear that users are likely to yield up their entire mobile address book when they use the service, and there is evidence that WhatsApp also stores metadata on the time, duration, and location of every communication.[27] Snapchat's disappearing messages have been mimicked by Instagram, also now part of Facebook, and the US Federal Trade Commission has challenged Snapchat on whether sent images really disappear.[28] Meanwhile, the growing popularity of ad blocking[29] may simply incentivize marketers to find smarter ways of tracking people so that they can be reached with ads. As the CEO of PageFair, a company specializing in such tactics, noted, "Tamper-proof ad serving technology has matured to the point where publishers can serve ads on the blocked web."[30]

Whatever the local resistances and derogations, extracting data from a "naturally connected" world has become basic to the very nature of brands: "Understanding that customers are always connected and consuming . . . allows marketers to think of both their digital and offline touchpoints as one fluid and integrated brand presence."[31] This vision of an economy enhanced by the data-gathering possibilities created by "connection" is shared by both market capitalism and state-led capitalism. In China, it is continuous connection that underpins the government's vision of "a networked, intelligent, service-oriented, coordinated 'Internet Plus' industrial ecology system,"[32] a strategy that serves China's desire to acquire both greater economic independence from the West and greater influence within global digital capitalism.[33] In India, the Aadhaar unique ID system introduced in 2009 is creating huge new opportunities for data exploitation by both government *and* corporations, although it faces greater civil-society opposition than have parallel developments so far in China.[34] Such *costs to human*

autonomy are not accidental but intrinsic to emerging logics of connection that treat the continuous monitoring of human subjects as not exceptional but "natural."

Colonizing Social Relations

Like historical colonialism, data colonialism would be inherently unstable if it could not translate its methods into more enduring forms of social relations. As Nick Dyer-Witheford pointed out in an early analysis, capitalism has always approached the internet as a domain in which control over the communicative capacity of individuals would allow capital to appropriate not just labor but also, as Marx himself put it, "its network of social relations."[35] Data colonialism extends this network well beyond communicative capacities, ensuring the continuity of data appropriation across an expanding array of social relations.

At the core of data colonialism is the creation of a new type of social relation that we call "data relations," as defined in detail later. Data relations make the appropriation of human beings' data seem normal, just the way things are. Data relations are of many sorts, but all share one basic feature: they ensure informational resources (data) for capitalism in areas of human life that, previously, were not considered direct inputs to production.[36] Far outside the sphere of normal productive activity, ordinary social interaction is increasingly lived in environments of continuous data collection, behavior prediction, and choice shaping. But this is possible only because social actors now enter more or less voluntarily into data relations that secure regular data flows for capital. The drive to expand data relations explains a lot about contemporary capitalism. So, for example, it is the need to make data relations routine everywhere that drives Facebook's offer of simplified internet connection (Facebook Free Basics) in more than twenty countries with weak or uneven internet infrastructure, principally in Africa. The emergence of data relations increasingly complements labor relations' contribution to capitalism's reproduction.

Meanwhile, existing social relations (including labor relations) for hundreds of millions of people are increasingly datafied—that is, managed through data, including data gathered from the surfaces or insides of work-

ers' bodies. Work, for many, increasingly occurs within the sort of corporate environment of sensors that Davenport imagined; in its absoluteness, this recalls the continuous surveillance, if not the violence, that slave labor endured on a large scale under historical colonialism.[37] Labor relations are becoming more directly and continuously extractive, whatever the formalities that cloak them.[38] This has implications too for inequality, as exposure to (or freedom from) continuous surveillance becomes a key factor that distinguishes lower-status from higher-status jobs.

New forms of labor are also emerging under data colonialism in the "sharing economy." Here data relations are fused with labor relations, although the existence of labor relations is controversially denied by platforms such as Uber.[39] These new *hybrid data/labor relations* encompass a huge variety of more or less formalized work, including data processing.[40] Labor is captured in a seemingly "scale-less" business model that detaches workers from institutional supports but richly rewards platform management. Rhetoric cannot disguise the potential for exploiting low-level work skills at a distance and therefore at a scale and speed without historical precedent (for example, the repetitive coding and data inputting necessary for the training of artificial intelligence in so-called Machine Learning).[41]

The relations between state and economy are also being transformed. Data relations give corporations a privileged window into the world of social relations and a privileged handle on the levers of social differentiation. States have become increasingly dependent on access to what the corporate sector knows about the lives of those states' citizens, reversing the long-subsisting direction of knowledge transfer (from states to corporations). Although the resulting relations have become hugely controversial in the West (consider Apple's high-profile battle with the FBI over the encryption of its iPhones), in other states such as China the government has been heavily involved in encouraging platform development, in part *because of* their surveillance potential. As Jack Ma, CEO of Alibaba, put it, "The political and legal system of the future is inseparable from the internet, inseparable from big data."[42] Meanwhile in India, Paytm, a mobile payment system (or digital wallet) used by 230 million people in which

Alibaba has a 40 percent stake, has faced scandal over its sharing of users' personal data with the government.[43]

Because data reinterprets the traces of the everyday world, large-scale data processing recalibrates social knowledge, with the consequences depending on the type of market society under analysis. In liberal market societies, the new data infrastructure involves for the first time market institutions in producing basic social knowledge. But in state-led market societies, such as China, the state acquires a remarkable new tool to *direct* the production of social knowledge in its own interests. It is now an explicit goal of the Chinese government to use artificial intelligence to "establish [an] intelligent monitoring platform for comprehensive community management." Direct social governance shaped by data colonialism becomes not a distant ideal but a practical reality. The result, as the Chinese government put it with no apparent irony, is "a market improvement of the economic and social order."[44]

New Colonial Corporations

Another way in which capitalism's new interrelations with data deserve to be called colonial is the massively unequal global distribution of economic power on which they are based. Chapter 2 will provide much more detail, but for now, here are the basics.

There is the ownership or control of the processes of data collection, which gives special power to whoever owns or controls the hardware and software that collects and analyzes data. Some analytics companies operate at huge scale: in 2014 Acxiom notoriously claimed seven hundred million customers worldwide and over three thousand pieces of information for every US citizen![45] The most dramatic example is Google, which, even though banned in China, still controlled 82 percent of the global search engine market in 2018, collecting data from us every time we use it.[46] There is also ownership or control of the "ecologies" within which data is collected, such as digital platforms and apps of various sorts. In terms of human users, these processes and ecologies of data collection are vast, and the resulting concentration of advertising power correspondingly huge: 72 percent of global advertising spending is in the hands of Google and Facebook.[47]

From this base, huge investments in data analysis techniques become possible, with so called deep learning increasingly central to the largest IT businesses. From early on, the vision of Google's founders was "AI complete." Much later, IBM announced in 2017 that it "is now a cognitive solutions and cloud platform company," while Microsoft reorganized itself in March 2018 to prioritize its cloud services and AI businesses.[48] The retailers Amazon and Walmart are giant data processing operations. But this is only the start of the layered power concentration that data colonialism enables.

There are many additional layers of colonial-style ownership. One is domination over production of the "tethered" devices through which human beings connect to the infrastructures of data collection (by "tethered," we mean a device whose use ties users to reliance on a particular operating system or set of proprietary products: think of Apple but also of the use restrictions built into most portable devices).[49] Another is power over the computing capacity that enables large-scale processing and storage of data, usually known as the cloud, a mystificatory term.[50] (Amazon by the end of 2017 already had 51.8 percent of global market share, rivaled only by Microsoft with 13.3 percent, the Chinese Alibaba with 4.6 percent, and Google with 3.3 percent.)[51] Important also are the remarkable monopolies in content delivery, whether monopolies over last-mile internet connection or phone spectrum: consider the near monopoly power of broadband providers such as Verizon in the United States, which has driven the recent US net neutrality debates.[52] Finally, as internet content circulation becomes ever more massified,[53] there are new forms of control over the production of content (think of Netflix's growing commissioning power or the pricing power over books and music of Amazon and Apple).

These layers of power concentration offer to citizens and consumers a world that is highly connected, but the quality of connection is distinctly uneven. Beyond questions of individual access, countries vary in the robustness of their internet connectivity, while intercontinental cable laying is becoming a growth area for the social quantification sector itself.[54] Although the exact distribution of the benefits of these power concentrations will no doubt evolve, at this point the global domination of a web of US companies and a small group of Chinese companies is secure.

New Colonial Ideologies

Such profound shifts in how value is extracted, social relations are organized, and economic power is distributed require narratives that reframe them in more acceptable terms. This is another aspect in which today's developments bear comparison with historical colonialism. Data colonialism is producing its own new ideologies.

First, there is the ideology of connection itself, which presents as natural the connection of persons, things, and processes via a computer-based infrastructure (the internet) that enables life to be annexed to capital. Connection is, of course, a basic human value, but the *requirement* to connect here and now—connect to *this particular* deeply unequal infrastructure—means submission to very particular conditions and terms of power. Perhaps the most frank admission of connection's ideological role came in an internal memo, later discounted by its author, that Andrew Bosworth, a Facebook vice president, posted in June 2016: "We connect people. Period. That's why all the work we do in growth is justified. All the questionable contact-importing practices. All the subtle language that helps people stay searchable by friends. All of the work we do to bring more communication in. The work we will likely have to do in China someday. All of it."[55]

There is also the ideology of datafication,[56] which insists that every aspect of life must be transmuted into data as the form in which all life becomes useful for capital. Practically, this means not just attachment to a computer connection but the removal of any obstacles to corporate extraction and control of data once that connection is established. The point is not that data itself is bad but that the compulsion to turn every life stream into data flows removes what was once an obstacle to extracting value from those life streams.

The marketing ideology of personalization makes such tracking and surveillance seem attractive. Who after all would *not* want a service more geared to his or her particular wants and needs? The argument, very simply, is that personally targeted messages require prior information that can come only from . . . targeted surveillance! Yet evangelists for data-driven personalization still feel the need to defend this ideology aggressively, as

when Acxiom, in a 2015 opinion survey, characterized acceptance of con-
tinuous data collection as "pragmatist" (fair enough) and opposition to it
as "fundamentalist" (itself rather an extremist statement).[57]

These specific ideologies are examples of "dataism."[58] They are tools for
shaping practice and thus highly specific in their applications. They are of-
ten combined with an overarching imaginative claim that we might call
myth: the myth that all this is inevitable and that today's infrastructures
of connection and data extraction fulfill human beings' collective poten-
tial in some transcendent way.[59] The term *community*, as something seem-
ingly inherent to human life, can easily fuel this myth. Think not just of
Mark Zuckerberg's frequent appeals to Facebook's "global community"
but also of the Tencent CEO's invocation of a "digital ecological commu-
nity."[60] This ideology of inevitability also has its counterpart in ideas on
the anticapitalist left that treat networks as the basis for a leap toward over-
throwing capitalism.[61]

Colonialism's and Capitalism's New Embrace

Data colonialism has a distinctive geography. Like historical colonialism,
data colonialism is global in its ambitions, but unlike it, it penetrates the
life conditions of individuals across all societies, wherever they are, that
are being reshaped around digital infrastructures of connection. Data co-
lonialism's expansion is therefore both external (geographical) and inter-
nal (social). Given that the drive to appropriate data is fueling China as
much as, if not more than, it is the West, it makes no sense to read data co-
lonialism as exclusively a Western project. Seeing today's transformations
bifocally—through the lens of both capitalism and colonialism—is essen-
tial to understanding their complex global dynamics. We cannot clearly
see the scale of capitalism's current appropriation of human life without a
colonial lens, and we cannot understand the force of this new colonial ap-
propriation without understanding how capitalism operates through pro-
cesses of social ordering.[62]

Indeed, capitalism's standard ways of understanding itself as a ratio-
nal order are effective in masking the colonial scale of appropriation that
is underway. Much of today's data appropriations are not seen in daily life

as appropriation at all but as part of everyday business practice. As such, data relations introduce into business management a new bureaucracy, as first theorized by Max Weber.[63] This bureaucracy is based on the apparent "rationality" of organizations' continuous data extraction. Here, as earlier in history, capitalism expands by operating as a system of meaningful social relations, reading the world this time as a mass of valuable data sources.[64]

Older critiques of historical capitalism can provide valuable insights here. One important idea is that of the "fetish." For Karl Marx, the fetish (classically the "commodity fetish") made the economic relations of capitalism *seem* necessary. Marx delineated a trinity of fetishized objects: interest as the fruit of capital, rent as the fruit of land, and wage as the fruit of labor.[65] Now we can add a fourth object: data as the fruit of life processes.[66] This is exactly how business now speaks (think of the mantra of data as the new oil).[67]

Another deep continuity with classic Marxist accounts comes from the data-driven possibilities of management control over production. The core of how industrial capitalism transformed work was not technological but social. The organization of work came under the exclusive control of management and, as such, became controllable at every stage of performance.[68] Traditional industrial management remained limited, however, to mechanical data collection based in observation or form filling. By contrast, data-driven logistics, built on infrastructures of connection and fueled by artificial intelligence, convert *all* aspects of production—far beyond the factory walls and in every corner and moment of a transnational supply chain—into a managed assembly line. The new infrastructure of data processing that sustains data relations extends so-called scientific management in ways that recall classic diagnoses of industrial capitalism: "The image of the process, removed from production to a separate location and a separate group, controls the process itself."[69] Through data, capitalism begins to govern the *whole social domain* with management logic, another aspect of its annexation of human life.

Having sketched the basic features of data colonialism, let's look a little deeper into the capitalist social order that emerges *through* data colonialism.

Data and the Emerging Social Order of Capitalism

Every aspect of data colonialism can be understood in terms of its contribution to a fundamental principle of capitalism: the drive to *maximize control of the inputs to its production process*.[70] This requires a reasonably ordered state of the social world that makes markets possible and functional. In all societies characterized by increasingly overwhelming information flows, the premium on society's legibility, even its basic countability, grows.[71] In capitalist societies that are not democracies, such as China, capitalism's desire for the control of production inputs works hand in hand with government's unrestrained desire to control all inputs to the social order.

This newly intensified role for both capitalism and governments in managing social life became possible only through the unprecedented technological opportunities for connection that we know collectively as the internet. Their origins lie in investment from the US Cold War military-industrial complex and subsequent massive corporate investment that transformed the internet into a global space for corporate networking and transnational market coordination.[72] Through the internet and its embedding into everyday life and business emerged something else: the possibility of a *new type* of economic and social order.

Note that we are not claiming that this order is completely discontinuous with the past. Certainly, data colonialism builds on the earlier growth of technological systems across most aspects of human life, something that German philosopher Jürgen Habermas metaphorically calls the "colonization" of lifeworld by system. But *that* process has been underway for more than a century and lacks the distinctive order of data colonialism.[73] It is important also, once more, not to just see this as a story about the West. After all, Tencent had already financed its fast-growing online chat platforms by a public flotation in 2004, the year Zuckerberg was launching Facebook. Neither is this just a story about Western values such as possessive individualism with which capitalism's growth has long been associated. For what today's infrastructures of connection make possible is a new economic and social formation in which the orders of

"liberal" democracies and "authoritarian" societies become increasingly indistinguishable.[74]

How then is this new type of order being built?

A New Social Order for Capitalism . . . Everywhere

The technological infrastructures of connection that have emerged in the past three decades have enabled a deep reorganization of social space and time, indeed, of social order. As Langdon Winner put it, "Technologies are ways of building order in the world."[75]

The starting point was disarmingly simple. Computers are universal machines in the sense that they can perform an unlimited number of operations; computers are able to model any aspect of the world that can, in principle, be modeled.[76] But computers *work* by capturing and archiving data about their own operations: they capture "changes of state" that follow from a keyboard action or other internal process.[77] Such capture is a form of translation, representing computer actions (and whatever external realities they model) in a language that enables them to be processed by the computer's "grammar" for storing information. This captured data becomes the basis for demanding future changes of state. When computers are inserted into social space (because human beings use them), this capturing facility becomes available to reshape that social space too. Long before the general availability of the internet, sociologist Shoshana Zuboff predicted that the computerization of inputs to production would transform the workplace by changing flows of information and the forms of authority and power sustained by those flows.[78]

Added to such basic data capture came the possibility of interconnection between computers through the internet. In a small network, the implications of data capture would have been limited, but when the push to commercialize the internet came with the World Wide Web, the introduction of commercial browsers (Mosaic and then Netscape), and the US government's decisive transfer of ownership of the internet's infrastructure from the state to commercial hands, decisive consequences for social life were to follow.[79] If the massive increase in popularity of personal desktops and laptops transformed the consumer market, it was paralleled by the growth of computer-based networking in the business world, an ex-

pansion in which the United States played a dominant role.[80] All these developments transformed the internet from a bounded "public infrastructure"[81] to an infinitely extendable space of connection across which global capital could freely range, under the auspices of the libertarian policy agenda sweeping the United States in the 1990s.[82] Move forward another ten years, and, through portable devices with connectivity (smartphones and then tablets), the internet stopped being something statically available from particular points in space and became a dimension that overlays social space continuously. As Rob Kitchin and Martin Dodge put it, "Software . . . alters the conditions through which society, space and time, and thus spatiality, are produced."[83] As a result, the internet, understood as an infrastructure of connection, has reconstituted social space in a fundamental way. In one sense, this was always the vision of IT pioneers. Tim Berners-Lee insisted in 1999 that "hope in life comes from the interconnections along all the people in the world."[84] But such connection was only the start of a larger transformation.

Combine vastly extended interconnection with that basic feature of computers (they capture data), and the result is the beginning of a radical new possibility: that each computer's archive of its own history becomes available to be tracked *and influenced* by any other computer anywhere in the internet's vast universe of networks. Human beings themselves, as regular users of those computers and their archives, became, in principle, "trackable and tractable."[85] The actualization of this theoretical possibility resulted from multiple commercial innovations, spurred by various forms of necessity and opportunism. It was marketers, plagued by the perennial difficulty of reaching customers with their messages, who took advantage first with the humble cookie, capable only of tracking people on single devices,[86] and more recently with techniques that link online data with offline behavior or use a social media ID to combine data about various online selves. The invention of social media platforms in which every user move is automatically tracked was a major further step. The data benefit unleashed to social media providers such as Facebook was huge: through its Open Graph program, Facebook gained access to what users did not only on Facebook but also on every platform that users accessed via their Facebook ID—for example, Spotify.[87] The result is what the industry, with-

out irony, calls "people-based marketing."[88] Meanwhile, Google's alliance in 2008 with online advertising company DoubleClick brought together Google's mastery of linking search activity to searchers' interests and DoubleClick's tracking of individuals based on their unique data profiles. Under Google's control, the combination of the two approaches greatly increased the information that could be matched with unique individuals.

The growth of computer-to-computer monitoring for marketing purposes was only part of a more general growth, starting in the 1980s, in the monitoring and shaping of life at a distance. Much of this data gathering requires no subterfuge, because it is a basic mode of operation in corporate intranets, networks of environmental sensors, and scientific data collection—that is, "new types of sensors are constantly becoming available."[89] Elsewhere the possibility of generating value through data by tracking users became a taken-for-granted feature of an online world whose resources were generally "free" but accessible only within a space in which sensing is built-in: the world of connected computers.[90] The embedding of sensing into everyday life is not something that users can control, however. Rather, since those tracking capacities are grounded in the basic software through which computers run, they introduce an internal form of order that is projected outward onto everyday life. The parallels with political and social order are not accidental. As Wendy Chun puts it, computer "code is executable because it embodies the power of . . . enforcement that has traditionally been the provenance of government."[91]

This power goes far beyond platforms' data gathering, even though it is the accountability of platform power that attracts the most debate.[92] The perspective of IBM on what it calls "digital disruption" (the rise of digital social platforms and infrastructures that were believed to challenge IBM's power as a long-existing market "incumbent") is striking:

> Many believed that the world's incumbent businesses were at risk of being marginalized. We had a different point of view. We did not believe the platform giants alone would dominate a data-centric economy—in large measure because they lack access to the most valuable sources of the world's data: the 80 percent that is not searchable on the Web. The world's incumbent businesses and institutions own and generate this data.[93]

Much of data colonialism's force in the social world comes from corporations of all types, with or without social media platforms, colonizing the world around them through the extraction of data.

Through these various steps, the capacity *to order the social world continuously and with maximal efficiency* has become, for the first time, a goal for corporate power and state power. Our computers and phones, and even our bodies if they carry trackable devices, become targets of this new form of power.

Two possibilities result that, before digital connection, were literally beyond the imagining of corporations or states. The first is to annex every point in space and every layer of life process to forms of tracking and control. After all, everything is in principle now connected. The second is to transform and influence behavior at every point so that this apparently shocking annexation of life to power comes to seem a natural feature of the social domain. Far from being imposed from above, this double transformation, like industrial capitalism in Marx's understanding, makes sense only as a deeply social transformation in which members of contemporary societies have agency, even if not much power.

From this transformation of the building blocks of social life follow other consequences that earlier social worlds had not foreshadowed.

Social power relations have become reversible in alarming ways. Think of our relations to everyday tools. Tools are basic to our sense of having individual agency in the world. But, as the Internet of Things expands, there will eventually be few everyday tools that do not have the capacity to monitor us, collecting data about how we use them and possibly about other ambient data of value to the tool's makers.[94] One example is Google, the search engine that records our searches in order to "search" us; another is "intelligent personal assistants" such as Amazon's Echo or Microsoft's Cortana[95] that, to work, must record how we interact with them. For now, people are still shocked to hear that their phones have a built-in capacity to listen to them, even when not making a call; in time, we may regard this as normal.

Yet a more connected social world will not necessarily be more secure. Indeed, there is no limit to the *instability* that an interconnected social order can generate. As Bruce Schneier argues, it is a fallacy to believe that

more connection generates more security. On the contrary, since the pos-
sibilities of bad actors are infinite, more connection must generate more,
not fewer, problems of security.[96] The average security robustness of con-
nected space tends to fall as more points get connected. Devices in the In-
ternet of Things (such as those that control fridges or thermostats) simply
lack the computing power to have their security repatched remotely, un-
like, say, desktop or laptop computers.[97] People cracking the code of baby
monitors to speak to and scare children supposedly under digital pro-
tection are just graphic illustrations of a much deeper security problem,
which in fact *serves* the interests of data extraction.[98]

Whether these things are serious concerns depends, of course, on
whether the priority is the security of the individual or the security of the
state. For a state like China, a more intensely connected system is likely
to be an advantage, making freedom the problem and internal data colo-
nialism potentially the solution. This helps us make sense of China's rev-
olutionary new "social credit system"—rather shocking to the West.[99] The
program aims to launch in 2020 and is expected to pool all information
about the creditworthiness and social worth of Chinese citizens into a
single interlinked system for monitoring and evaluation.[100] China's huge
platform growth (especially of Alibaba and Tencent) in the past five years
provides the core infrastructure for this project, but those platforms are
building their own supposedly separate systems of credit rating (Sesame
Credit and Tencent Credit).

In both liberal market societies and authoritarian market states, data
colonialism's consequences for social inequality are dramatic. This stems
from a basic feature not of computers but of data. The purpose of collect-
ing data is always to differentiate:[101] data's purpose is to generate informa-
tion that usefully discriminates between entities. Again, discrimination in
itself is not bad: we want a heart recorder that correctly distinguishes be-
tween a heartbeat and other bodily signals. The issue is how data discrim-
inations are applied within the framework of existing structures of social
discrimination. Today's vast infrastructures of connection, like all forms
of power, build on existing inequality. But they also create new forms of
inequality through various means: inequalities of data capital,[102] exploita-
tion of the human labor that sustains Machine Learning, and the ability of

data-driven categorizations to reinforce those existing inequalities. Just as the capitalization of work through labor relations has over time produced a highly unequal distribution of the profits generated by labor, so over time we can expect the capitalization of life through data relations to introduce new forms of inequality into human life itself. We can increasingly expect human beings to be socially managed *in terms* of their data value—that is, their value as data inputs to capitalist production.

Platforms' Role in Stabilizing Capitalism

How, practically, does capitalism, whether in its pure market or state-sponsored forms, try to hold together this emerging social order? Capitalism needs primary relations of data extraction to at least be stable, predictable, and convergent. One key tool for ensuring this is the digital *platform*, whose basic function we outline here.

Platforms are structured online spaces, made possible through elaborate software, that offer services of various sorts: a space to sell things, meet people, share information, find specialist resources, and so on. But they are also fundamentally spaces for data extraction. As Tarleton Gillespie puts it, platforms are "built on an infrastructure . . . for processing data for customer service, advertising, and profit" that makes them "oriented toward eliciting more data, and more kinds of data, from [their] users."[103] Platforms generally operate without explicit payment. The actual "payment" that the platform operator receives is usually based directly on the data extracted, though often also in part on data-driven advertising. The data "payment" is more interesting than the advertising payment. It can be either the value that the operator generates by packaging and selling to third parties the data it gathers about transactions and users (the commodity value) or the value that the operator raises by giving others access to its data (what we might call the rent value). Either way, surplus value is generated, although in a connected space of infinite size; economic success requires platforms to achieve a sufficient scale of operation to realize that surplus value effectively.

As part of their basic business model, platforms operate as multiway data auctions, linking users, data buyers and users, and of course the platform itself. As Julie Cohen explains, the basic structure of platforms gives

their operators a remarkable power to organize parallel series of economic relations through adaptable arrangements,[104] with each series arranged through the platform's interface software. This convening power of platforms creates a recentralizing force that requires all actors to make their content "platform ready."[105] That force is based on platforms' power to control the degree and type of data extraction that is the "price" ordinary platform users must pay.

Platforms create an interface without historical precedent: an interchange in which social life in its open-ended variety *interfaces seamlessly* with the forces of economic extraction. This seamlessness is not natural any more than data is naturally raw. It must be constructed through the painstaking removal of barriers to data flow within and between platforms; seamlessness is an achievement, in part, of software that enables platforms to produce "the social" for capital. This explains the deeply ambiguous status of the largest and most successful platforms, such as Facebook, which is expected to speak for and even regulate the social world because of the power that running a platform with two billion users gives it. Major platform power in China (Alibaba and Tencent) is even more ambitious, developing a triple interface across social, economic, *and* financial worlds to provide a new practical infrastructure for the world's largest society. These models of economic power and social order depend on the unspoken principle of seamlessness: every barrier to data flow is a barrier to the unlimited production of social life in forms that can generate data for capital.[106]

The largest platforms distribute their presence across the internet via plug-ins that allow platform users, wherever they are, to link back to the resources of the platform, creating even more possibilities for aggregating data continuously across space and time.[107] These power concentrations depend on the emerging social centrality of these platforms in a genuine sense, for we really *do* go onto platforms because we know others will be there (the so-called network effect). That is why platforms are fast becoming meaningful social infrastructures too.[108] In these various ways, platforms are a principal organizational form through which capitalism's connected social and economic order is being realized.[109] They are a key tool for ensuring that the colonial-scale appropriation of data for human life becomes the norm. As networks, some platforms are larger than most na-

tion-states. The largest platforms conceive of themselves accordingly. As Zuckerberg put it, "In a lot of ways Facebook is more like a government than a traditional company."[110] The longer-term implications for legal, political, and social power are as yet unknown. One key way in which platforms produce the social for capitalism is through a new type of local social relation that stabilizes our habits of connection. Our term for this is *data relations*. Let's look at these relations in a little more detail.

Data Relations

Data relations are the emerging social form through which data colonialism as an extractive process gets stabilized between individuals, groups, and corporations, and so it comes reliably to contribute to capitalism's emerging new social order.[111] By "data relations" we do not mean relations between data but the new types of *human* relations that data as a potential commodity enables. In time, data relations are likely to become as naturalized as labor relations.

Some forms of data relations—for example, within a corporation that has the residual power to collect data across its activities—are operational and require no additional level of social agreement. But in many other cases a relation has to be constituted in such a way that it enables data to flow in the first place. Once constituted, the seeming naturalness of the relation frames the resulting data as something that can be validly extracted from the flow of life. Without the act of extraction there would be no identifiable item of data and thus no separate right to extract that data. It is the stability of data relations that enables data extraction to seem both valid and beyond challenge. This is another consequence of the basic point already noted, that data is not natural but a resource whose extractive possibilities must themselves be socially constructed, just as physical nature had to be reconfigured so that it could be exploited by capital.[112]

Data Relations: Their Key Features

To be an effective foundation for a new type of social order, data relations need not have the solidity we imagine in many work contracts. Indeed, Zuboff plausibly argues that much data extraction today is not a contract

or relation at all, in that data just seems to get extracted at a distance.[113] But the wider set of arrangements on which data colonialism relies would be ineffective unless they operated as *something like* a social form that seems both natural and normal, quite unlike an arbitrary act of theft or extraction. It is this social form we call data relations; data relations enable the basic processes of social construction on which the stabilization of data colonialism depends for the long term.

We can expect the varieties of data relations to grow massively as data colonialism itself expands. To get at the core of what we mean by a data relation, imagine yourself entering a spiral. The entry point is that at which, for whatever reason, you enter the ambit of computer monitoring. Computer tracking is now so basic to the social world that it might seem hard to imagine one *not* already being within that ambit, but, even so, at any moment there is always likely to be at least one specific transaction in which you are engaged that motivates the capture of particular life traces from you. It could be using a search engine, investigating a particular website, searching for a product at a good price, using a platform, or dealing with an institution (say, a school, corporation, or government). Sometimes the entry point will derive from an extra step you have taken—for example, attaching a tracker to your body or accepting a tracker's presence nearby as you perform a task.

You have, wittingly or unwittingly, entered the spiral of data relations. But those relations may or may not be based on consent. Implied consent, even if unenthusiastic, is common to many platform situations. Often rolled into this consent is acknowledgment of the platform owners' claim to thereby own the data, even though this is rarely made explicit; if it was, it would likely be contested more often. Incorporated also is consent to other, more subtle conditions that are required to convert the flow of a person's life into material for valuable data extraction in combination with the parallel flows of data about others' lives. The information that Facebook requests before you join the platform illustrates this: What is your birthday? What school did you go to? And the like.

In most cases, however, there has been little consent to data collection *as such*, although recent European legislation, the General Data Protection Regulation, seeks to change this, at least in a formal sense. Yet, in agree-

ing to or accepting data collection, people may have a pressing need to se-
cure a service of some sort (just as a labor contract is held together by the
worker's need to sell her labor power for money so she can buy the ne-
cessities of life). Through data relations, for example, we access connec-
tion (platforms where everyone else we know is a user) and services that
are basic to daily life, such as insurance. Service providers may claim they
need to track us continuously to provide that service, or they may require
registration through an identifying feature (say, a social media login) that
draws us into releasing even more data.

Sometimes there is no consent to data relations at all, just brute ne-
cessity. One example is when people wear a sensor or tracker, on order of
their employer, as they move around their work space. Another example is
when, as in China's Xianjiang province in February 2017, the government
banned petrol sales to anyone without GPS tracking installed in his or her
car.[114] The logical limit of consent is when—as is increasingly common in
China today—paying for transactions or just walking around public space
involves facial recognition by algorithmically enhanced tracking systems
linked to national databases. The development of systems that manage
these barely consensual relations is a growth area: the Beijing company
Face ++ was valued at $1.5 billion *before* its latest fund-raising from the
Chinese and Russian sovereign wealth funds.[115]

Not all data is immediately available to be commodified. Indeed, much
data gathered by corporations may lack a value until a specific use for it
can be found in the context of much larger data sets. But some data—
for example, about potential interest in a purchase signaled when a link
is clicked—may have a precise value on an advertising auction platform
such as Google's Adsense and Alibaba's Alimama. Whether immediately
commodifiable or not, the data extracted has potential value in a wider
space of equivalence in which the individual's distinctive properties as a
data source can be ignored (this abstractness is exactly how Marx under-
stood commodification to operate).[116] The commodification of exchange-
able data is the end goal of data relations and is, as Matthew Crain notes,
"the root of [their] power imbalances."[117]

The final turn of the data relations spiral comes when categorizations
derived from the processing of your data are applied back onto you, the

human subject, from whom the data was derived, whether or not you are identified by name. Data subjects often attempt to modulate their behavior in order to influence the algorithm that they believe is categorizing them. But however well meaning, this ignores the basic point: that just by *going on* with the activity that brought us into data extraction's ambit, we confirm data relations' continued force.

Through the regular, compressed repetition of these elements in myriad forms, data extraction starts to become part of the natural order of things.[118]

Updating Marx for the Age of Big Data

There is an echo of Marx in what we have said so far about data relations, but our argument is not in line with orthodox Marxism.[119]

Many remember from Marx the idea that capitalism's social order is based on labor relations: the transformation of what was once just productive activity into labor power. Labor power has the abstract measurable dimension of a commodity that can be exchanged in a market for money. Under capitalism, workers stop being "a part of the conditions of production (as in slavery or serfdom),"[120] and their labor power becomes something they can sell as a commodity. But if that were all there was to Marx's social theory, it would not help us understand a world in which, as we have seen, capitalism's underlying drive to capitalize life itself has taken on new forms that are not all routed through labor—that is, what is understood in some sense as productive activity. We are concerned here with the annexation to capital of life processes *whether or not* they are labor, evidenced when many of the life streams from which data is extracted for value are not seen by those involved as part of any productive activity.[121]

What is core to the new capitalist social order is that ordinary social interaction today contributes to surplus value not as labor but as a factor of production.[122] Human life is being incorporated within a vastly expanded production process and, as such, faces increasing pressure to be commodified, whether as data for which platforms get paid in some form or (in the vision of some reformers) as a form of disguised labor power, for which those reformers propose platform users get paid.[123] The key point is not whether some payment results but that the data traces of our activities are

under pressure to be commodified at all.[124] This is the central change underway, and it flows not from the transformation of labor via digital platforms but from something deeper: *an expansion of the whole process of capitalist production and the factors that contribute to it* to encompass the flow of human life in all its open-endedness. In the long run, this expansion of production may develop into an entirely new "mode of production," in Marx's term, but just a decade or so into datafication, it is premature to name this yet.

In arguing this, we are following Marx, but we are doing so in a way that works creatively with his social theory for the age of data colonialism. We draw here on a radical reinterpretation of Marx offered by the late Moishe Postone. This reinterpretation reads Marx as proposing that the fundamental social form of capitalism is not labor relations but rather the commodification that underlies, for example, the transformation of everyday work *into* labor relations.[125] We say "for example" because on this reading of Marx, other transformations through commodification are possible, and not only in the domain of work. Marx himself seemed to envisage just such a broadening of commodification when he wrote that "as capitalist production i.e. capital develops the general laws governing the commodity evolve in proportion."[126] As already noted, Marx discusses how the materials workers use in the labor process themselves acquire exchange value as commodities, and so, for example, seeds and manure become commodities under capitalism, even though before capitalism they were just part of the normal cycle of land use.[127]

On this reading of Marx, at the core of industrial capitalism's longterm transformation of the social world was how work (the everyday productive activities that have gone on since the beginning of time) acquired an abstract dimension that enabled it to be commodified, that is, turned into a commodity that could be exchanged.[128] It is this possibility of *abstracting value from life processes*, even when they are not directly productive activities, that leaves open the prospect of new types of commodified social relations and, through them, a new social order for capitalism.

We know that data is produced by abstracting the processes of human life into measurable bits and types. We know also that data is not simply abstracted from us automatically but through arrangements and relations

into which we are assumed to have voluntarily entered at some point, even if retrospectively. Meanwhile, data is being increasingly, though as yet unevenly, commodified. Therefore, our proposal is simple: that just as industrial capitalism, according to Marx, changed society by transforming the universal human activity of work into a social form with an abstract dimension (via the commodification of labor), so capitalism today, in the expansionary phase we call data colonialism, is transforming human nature (that is, preexisting streams of human life in all its diversity) into a newly abstracted social form (data) that is also ripe for commodification.

It is this transformation that is the larger context for the datafication of labor relations that many critics have noted.[129] It is this transformation also that links the appropriations of data colonialism to contemporary capitalism's latest lines of expansion. But the outcome is hardly something to celebrate. For the unwelcome truth is that, just as in Marx's eyes capitalism had disrupted human beings' relations with physical nature, in the era of data colonialism, capitalism risks disturbing humanity's relations to *its* nature—that is, our lives as reflexive, relatively autonomous human beings. Data colonialism interposes infrastructures of data extraction directly into the texture of human life and so risks deforming human experience in a fundamental way, invading the space of the self on which the values of autonomy and freedom in all their forms depend.[130]

Our Argument within the Wider Debate about Data and Capitalism

Why is it that so far we have talked simply of *capitalism* and not *digital capitalism, informational capitalism, communicative capitalism, platform capitalism*, or *surveillance capitalism*, to name some rival terms?[131] The reason is straightforward. No convincing argument has yet been made that capitalism today is anything other than what it has always been: the systematic organization of life so as to maximize value, resulting in the concentration of power and wealth in very few hands. Contemporary societies are marked by the ever-increasing importance of the circulation and processing of information. As we emphasized earlier, this accelerated circulation and extraction of data and information has had profound impacts on the management of business, on the organization of work, and on the inte-

gration of social life into the economy. But that is no reason to say that the fundamental drivers of capitalism have suddenly changed; they have not.

Therefore, when we use the term *capitalism* with a contemporary reference, we mean capitalism as it is now developing in societies in which "the production, accumulation and processing of information" is growing.[132] Surveillance is certainly part of this, again as we have emphasized, but not sufficiently to brand today's capitalism as surveillance capitalism. For, within the longer history of colonialism *and* capitalism, surveillance has often been the accompaniment to the direct appropriation of laboring bodies for value (think of the slave plantation).[133] What is new today is not so much surveillance but rather the networks of social relations in which vastly extended modes of appropriating human life through data work to order economic and social life as a whole. That is the larger picture we see by working simultaneously with the concepts of data colonialism and capitalism.

It might also seem surprising that, up to this point, our argument has not referred to neoliberalism. The concept of neoliberalism, most thoroughly developed by Michel Foucault, is enormously important for grasping the cultural, political, and social means by which capitalism has been reproduced and reinforced in the late twentieth and early twenty-first centuries.[134] There is no question of its continuing relevance. Indeed, some recent accounts of neoliberalism, such as Wendy Brown's, come close to ours in their overall diagnosis of what is wrong in capitalist societies.[135] That is because neoliberal politics from the 1980s onward transformed culture and politics by insisting that market functioning should govern all of life, not just formal economic processes, thus justifying many forms of market deregulation and financialization as well as the invasion of market logics into spheres previously protected from them. As such, neoliberalism has contributed to the general *preconditions* of data colonialism and specifically to preparing people for the intimate relation to capitalism that data relations bring. But data colonialism goes beyond neoliberalism by *literally annexing* human life directly to the economy and reorganizing it fundamentally in the process. When data colonialism is complete, there will be no need for the ideology of neoliberalism, since there will be nothing left of human life *except* materials for potential commodification. At that

future point, the boundary around social and personal life that neoliberal logics once transgressed will have dissolved, revealing data colonialism as neoliberalism's ultimate horizon.[136]

Finally, what of this book's relation to the many Marxist readings, particularly in the Autonomist tradition, of digital networks and social media platforms as the launchpad for ending capitalism? There are two important points to be made here. First, we acknowledge that some might see in our analysis of the "capitalization of life itself" merely a replay of the Autonomists' 1960s analysis of capitalism's social expansion. Indeed, today's exposure of daily life to capitalist forces of datafication does seem superficially similar to the well-known Autonomist notion of the "social factory," which argued that the capitalist organization of work had extended from the factory to the whole of society.[137] But Autonomists were rather vague about the mechanisms of this general intensification of capitalism's influence over social life, except when they claimed the structure and norms of capitalist work somehow expanded out into social life.[138] That idea gives us no grip at all on data colonialism, which, as we have shown, appropriates life as raw material whether or not it is actually labor, or even labor-like. Our temporal scale for appreciating these developments should be not so much the past half century of socializing capitalism, especially in Europe, but the centuries-long global cycle of colonialism's long intertwining with capitalism.

This takes us to a second key point. Because Autonomist analysis is based on a reading of capitalism's long-term social expansion that was *already* underway in the 1960s, it does not serve us well to assess the sites and potentials for resistance to this century's developments around data. What if human experience is becoming a condition or factor in capitalist production, with no agency *as such* to overthrow capitalism unless this integration into production is itself resisted?[139] What if today's networked social relations herald not a new awakening of the social spirit but capitalism's deepening *through* the reorganization of human life as a whole and not of labor specifically?[140] The latest Autonomist thinking certainly addresses the extraction of data[141] but argues that although the creative capacity of humanity is exploited by the social quantification sector,[142] this capacity remains somehow unaffected by the process, ready to jump into

resistive action.[143] This ignores completely the pervasiveness of data co-lonialism as a form of extraction and the force with which it is being ap-plied, whether in the workplace, in financial and legal transactions, or in our transformed understanding of the social world itself. And it ignores the power of data relations to restructure life for capital in societies such as China and Russia, where data colonialism proceeds under the auspices of an authoritarian state. As Michael Hardt and Antonio Negri write, "Be-hind the value of data . . . stands the wealth of social relationships, so-cial intelligence, and social production."[144] But there is no "behind" in the space in which data colonialism operates; it is not a stage with a front and back but a force field, as powerful in the long run as the force field of labor relations that transformed the social world two centuries ago.

In this chapter, we have unpacked the double theoretical foundations of our argument: data colonialism and the emergence through data rela-tions of a new capitalist social order. In the next chapter, we look more closely at the Cloud Empire that is emerging through the playing out of data colonialism on a global scale.