THOMAS NAIL

BEING AND MOTION

"This bold and imaginative book outlines an ontology of being as motion and a materialist conception of the ontological practices that underlay previous Western ontologies of space, eternity, force, and time. Its extraordinary ambition to create a new domain of kinetic philosophy is matched by its scope and wide-ranging erudition. *Being and Motion* is a book for our time."

—Paul Patton, Professor of Philosophy, University of New South Wales, Sydney

"This is a remarkable project, comparable in scope and ambition to Martin Heidegger's *Being and Time*. In his earlier books on 'kinopolitics,' Nail showed that we have entered a new kinetic paradigm in politics in which the migrant is the primary figure, and states, borders, and citizenship are all secondary phenomena derived from this regime of people-in-movement. *Being and Motion* takes this project to a broader ontological level, arguing not only that movement must now be seen as the fundamental category of 'being,' but that ontology itself must become mobile. This is philosophy on a grand scale: bold, innovative, and wide-ranging."

—Daniel W. Smith, Professor of Philosophy, Purdue University

MORE THAN AT ANY OTHER TIME IN HUMAN HISTORY, we live in an age defined by movement and mobility; and yet, we lack a unifying theory that takes this seriously as a starting point for philosophy. Why, when movement has always been central to human societies, did a philosophy based on movement never take hold? This book finally overturns this long-standing metaphysical tradition by placing movement at the heart of philosophy. In doing so, *Being and Motion* provides a completely new understanding of the most fundamental categories of ontology from a movement-oriented perspective: quality, quantity, relation, modality, and others. It also provides the first history of the philosophy of motion, from early prehistoric mythologies up to contemporary ontologies. Through its systematic ontology of movement, *Being and Motion* provides a path-breaking historical ontology of our present.

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INTRODUCTION I
The Age of Motion

We live in an age of movement. More than at any other time in history, people and things move longer distances, more frequently, and faster than ever before. All that was solid melted into air long ago and is now in full circulation around the world, like dandelion seeds adrift on turbulent winds. We find ourselves, in the early twenty-first century, in a world where every major domain of human activity has become increasingly defined by motion.[1]

Socially, life is becoming increasingly migratory.[2] At the turn of this century, there were more regional and international migrants than ever before in recorded history.[3] Today, there are more than one billion migrants.[4] With each new decade the percentage of migrants as a share of the total population continues to rise, and in the next twenty-five years the rate of migration is predicted to be higher than in the past twenty-five years.[5] More than ever, it has become a necessity for people to migrate due to environmental, economic, and political instability. Climate change, in particular, may even double international migration over the next forty years.[6] By 2050 more than two billion more people are expected to migrate to urban centers around the world.[7] While many may not cross a regional or international border, people do tend to change jobs more often, commute longer and farther to work,[8] change their residence repeatedly, and travel internationally more than ever before.[9] This general increase in human mobility and expulsion affects us all in one way or another, and it is now widely recognized as a defining feature of our epoch.[10]

This global movement has also given birth to an explosion of bordering techniques for managing and circulating human movement. Since the mid-1990s, but particularly since 9/11, hundreds of new borders have emerged around the world—miles of new razor-wire fences, tons of new concrete security walls, numerous offshore detention centers, biometric passport databases, and security checkpoints of all kinds in schools, airports, and along various roadways across the world—all attesting to the increased social anxiety about controlling social motion.

Contemporary politics can no longer be adequately understood through the paradigm of static states, immobile borders, and stationary citizens. This theoretical framework no longer fits the reality of global mobility, fluctuating borders, and

constant migration. An increasing number of scholars across a range of disciplines are coming to recognize the primacy of social mobility and movement.[11] The expectation that the world of mobile bodies will conform to a static model of states, borders, and political behavior is causing millions of people around the world to undergo immense suffering. If we want to understand contemporary social reality, and thus respond to it appropriately, we need a new set of conceptual tools based on the primacy of motion.[12]

Scientific knowledge in the twenty-first century also reveals that we live in a world of continuous motion. At the macroscopic level, cosmologists just before the turn of the twenty-first century discovered that the universe is not only expanding in every direction but also that the speed at which it is doing so is rapidly increasing.[13] We live in what physicists call an "accelerating universe." What Einstein thought was an immobile and finite universe is actually defined by increasing movement in all directions.[14] The very fabric of space-time is now defined by the primacy of a continuously expansive movement.

At the mezzoscopic level, the development of nonlinear dynamics toward the end of the twentieth century showed decisively that even the predictable particles of classical physics are subject to irreversible thermodynamic and kinetic flows of energy. Chaos theory, the often touted "third" scientific revolution of the twentieth century, has shown that the flux, turbulence, and movement of energy are more primary than the relative or metastable fixity of classical bodies.[15]

At the microscopic level, it is also increasingly clear that space-time and gravity are not preexisting, fundamental aspects of reality but actually products of more primary quantum motions. What we used to think of as solid bodies, elementary particles, and background parameters are actually products of nonlocal vibrating quantum fields. Unifying the macroscopic theory of gravitational space-time (general relativity), and the microscopic theory of quantum fields is the primary task of physics today. Toward the end of the twentieth century, two major theoretical systems became the most dominant candidates for unifying them: loop quantum gravity and string theory. Contemporary physicists are now eagerly searching for a quantum theory of gravity that would explain all of fundamental reality through the kinetic vibration of fields.

While there is currently no scientific consensus or unification of the two competing theories,[16] quantum gravity theorists agree that space and time are not ontologically fundamental but are emergent features of continuously fluctuating fields. The old paradigm of a static cosmos, linear causality, fundamental particles, and classical space-time no longer fits the twenty-first-century reality of cosmic acceleration, turbulence, and continuously vibrating fields. These three revolutions that came to a head at the end of the twentieth century are today widely recognized as the most important revolutions in fundamental physics.[17]

In short, if we continue to think of motion as something that only happens when given beings move from point A to B, and not something that is fundamentally constitutive of beings themselves and those points, we will fail to understand the most important scientific phenomena of our time, such as nonlocality, entanglement,

tunneling, and quantum gravity.[18] Therefore, if we want to understand these sorts of events and many others in contemporary science, we need to begin philosophy as each of these scientific revolutions has: with the primacy of motion.[19]

Images have become increasingly mobilized as well. Today, there are more images in wider circulation than ever before. This is in part due to the worldwide increase in mechanical reproduction technologies, global transportation methods, and distribution circuits during the latter part of the twentieth century. There are now more written, spoken, and visual images moving around the world, faster and farther, than anyone could have ever anticipated. However, perhaps the single greatest source of this massive circulation of images has been the advent of the digital image. Just before the turn of the twenty-first century, a host of digital media technologies (computers, the Internet, video games, mobile devices, and many others) unleashed the largest flow of digitally reproduced words, images, and sounds the world has ever witnessed. No other kind of aesthetic medium or method of mechanical reproduction can possibly compete with what digital media has done to the image during this time period. The digital image thus gave a mobility to the image on a scale never before witnessed in human history.

The advent of television and radio in the twentieth century marked the beginning of the image revolution. They gave birth to the revolution's earliest electromagnetic and mobile form. However, they also restricted it to relatively centralized, homogenized, and unidirectional forms of "programming." By contrast, the new interactive and bidirectional nature of digital media today has expanded the mobility and mutability of the image in completely new ways. With the popularization of the Internet and mobile devices—cell phones, smartphones, tablets, and laptops—at the turn of the twenty-first century, the image has become not only ubiquitous but increasingly portable. As of 2014 there were more active mobile devices than there were people on the planet. The mobile phone is probably the single fastest-growing human sensory technology ever made, growing from zero to 7.2 billion in a mere three decades.[20] What is more, the digital image has incited a huge revolution in publishing, journalism, entertainment, education, commerce, and politics—a global transformation unmatched by radio and television. The digital image has both integrated and carried forward analog media, giving rise to whole new digitalized industries in the process. Industrial factories and workers are increasingly replaced by Internet servers and automated checkout software. We have now entered a new historical-aesthetic regime; that is, we are now in the age of the image.

It is now possible for anyone to communicate by voice or text with anyone else, to listen to almost any sound ever recorded, to view almost any image ever made, and to read almost any text ever written from a single device and from almost any location on earth. All of this is now available on the move—and is itself in movement in the form of an electrical flow. The image will never be the same. The contemporary mobility of images, made possible by the advent and dominance of the digital image, is not just a quantitative increase in reproduced images. Digital media and the digital image have transformed the qualitative structure of the image itself. Anything can now be digitalized, mobilized, and browsed nonlinearly through a single portable device.

Anything can now be made responsive and interactive with the viewer through the use of digital software and a continuous flow of electrical current. None of the senses has remained unchanged by the advent of the digital image—even taste and smell images can now be synthesized using computer software.[21] Of course, something is always lost in transit as the continuity of the electrical flow is converted into digitally discrete 1's and 0's, but the image moves on regardless, sweeping us all along with it. In such a world of moving images, aesthetics can no longer be adequately understood by the old paradigm of representation. Recent scholarship in art and aesthetics increasingly attests to this recognition.[22] Images have taken on an increasing mobility that shifts back and forth *between* object and subject, copy and model, transforming and modulating them in a continuous feedback loop. Old theoretical frameworks no longer fit the twenty-first-century reality of interactive electrical circulations and continually modulated images.[23]

ONTOLOGY

Ontological practice, the primary subject of this book, has also become increasingly mobile. This is in part due to the increasingly mobile nature of the social, scientific, and aesthetic events of our time (described above), whose being ontology attempts to describe. As the world has become increasingly mobile, our ontological descriptions of it have struggled to reflect this. Furthermore, ontology is in turn actively and practically shaped by the contemporary political, scientific, and aesthetic conditions it describes. Those who write ontological descriptions, for example, travel longer distances and more often than ever before—and thus participate to some degree in a vast global-migration regime.[24] Their digital and printed texts now circulate faster, in more media forms, and more broadly than before. Even the technical conditions of written images and their distribution are now faster and more dynamic due to the equations of quantum field theory that structure the computers that philosophers write with. In short, ontology today is more mobile than ever before because it is *practically entangled* with all the increasingly mobile events of our time.

Ontology has traditionally been defined as the universal description of being as it is in itself (i.e., being qua being). This definition can no longer be upheld today.[25] This is not because we have discovered that there is no reality independent of our sensation of it but because it has become almost impossible to ignore the now manifold and expressly mobile material conditions that shape and are shaped by ontological description itself, as a performative practice.[26] The way we describe the world is shaped by the apparatus of description we use—and the world is in turn really and materially shaped in some way by our description of it.[27] Ontologies matter. Ontologies are real acts or processes of materialization with their own sets of tools and networks of mobility. They are not neutral representations. This is what makes them historical, practical, and entangled with the contemporary conditions they describe. They are aspects of the same historical process. The vast proliferation, mixture, and global circulation of old and new media technologies today has thus

increasingly forced us to confront how incredibly mediatized, and thus material and historical, our ontological practices have become (and have been).

Theorists today increasingly acknowledge this situation.[28] According to Friedrich Kittler, "Ontology has been hostile from its very beginnings to media, whether physical or technical. More than any other theorists, philosophers forgot to ask which media support their very practice."[29] The aim of this book is therefore twofold: first, to provide a new ontology of motion for our present that responds more appropriately to the increasingly mobile conditions of our time, as described above; and second, and more specifically, to apply this new ontological framework to the material history of ontological practice itself—thus also revealing the kinetic conditions of contemporary ontological practice itself, including this book.

Being and Motion thus makes at least three novel and intertwined interventions: it provides (1) an original and systematic ontology of motion alongside (2) the first history of the philosophy of motion in the Western tradition, in relation to (3) the history of its material and practical conditions of inscription.

THE TWENTY-FIRST CENTURY

The major historical events described above are part of a larger shift taking place in the early twenty-first century, a shift toward the increasing importance of motion. The exceptions to the rules of the previous static paradigms have now themselves become the rules in a whole new kinetic paradigm.[30] Global migration, climate change, and border politics are no longer marginal issues but have increasingly come to destabilize the nation-state system itself.[31] In the West, mobile devices and their mobile images are no longer luxury items for the privileged few but have transformed every aspect of daily life, including the human brain itself.[32] Quantum field theory is no longer an obscure area of scientific speculation about microscopic exceptions to the rules of classical physics—nonlocality, entanglement, and tunneling—but has become what physicists now call "the standard model,"[33] which now underpins almost every new contemporary technology, from global-positioning systems to computer processing techniques.

The difference between the end of the twentieth century and the beginning of the twenty-first, however, is not a difference *in kind*, but rather a difference *of degree*—from solid to liquid. The transition has been dramatic, but it has nonetheless also been continuous and incremental. Only in the twenty-first century, however, have the events described above ceased to be aberrations or emerging trends, as they have now become foundational events of our time. They are the beginning of a new paradigm defined by motion.[34]

The political, scientific, and aesthetic consequences of this new kinetic paradigm are enormous and thus beyond the range of this book. They are, however, important contemporary conditions that situate and motivate the ontology of motion put forward in this book. Twenty-first-century transformations in each of these domains (politics, science, art, and ontology) should be considered together, even if each

requires its own full-length treatment. They are interrelated parts of a single project inaugurated by this author's books *The Figure of the Migrant* and *Theory of the Border*, and now continued in *Being and Motion*. Although motivated and co-conditioned by these other domains, the focus of the present book is on the strictly ontological aspects of this new kinetic paradigm—the details of which will be introduced in the next few chapters.

The point of this introduction is this: I believe we have entered a new historical era, defined in large part by the primacy of movement and mobility, and are now in need of a new ontology appropriate to our time. The observation that the end of the twentieth century and the beginning of the twenty-first was a period marked by an increasingly "liquid" and "mobile" modernity is now something widely recognized in the scholarly literature.[35] Almost twenty years into the twenty-first century, we now find ourselves situated on the *other side* of this heralded transition. Our situation today is therefore importantly different from the transition to postmodernity, beginning in the 1970s. The question that confronts us today is thus a new one: how to fold all that has melted back up into something new. Answering this question requires a new and different set of theoretical tools.

The challenge for theory today is to look afresh at the perspectives, problems, and possibilities that are opened up to us by our new historical conjuncture. In other words, what do the major events of our time reveal about the nature of being as it is for us today? At no point in history have beings ever been anywhere near as mobile as they are today, so what does this say about the nature of reality such that it is capable of this degree of mobility? If being is defined by the historical primacy of motion today but existing ontologies are not, then we need a new historical ontology of the present.[36] This is what *Being and Motion* provides.

BOOK I

The Ontology of Motion

PART I

Ontology and History

CHAPTER 1

Historical Ontology

More than ever before, the fact that everything is up in the air and on the move requires us to seriously rethink not only global migration, the problem of knowledge in quantum field theory, and the nature of affect and image in an age of digital mobility but also the conceptual and ontological frameworks we use to describe the *being* of these kinds of events. This task is the special focus and unique contribution of *Being and Motion*: to provide an ontological and historical framework for describing the being of motion and the motion of beings.

The central contribution and importance of this book is therefore twofold. On the one hand, it aims to produce a new conceptual and ontological framework for describing the being of motion. The purpose of such a framework is to provide a new and more fitting lens by which to interpret a wide range of kinetic phenomena across scientific, aesthetic, and social fields. This is the framework deployed systematically in the companion volumes to *Being and Motion* mentioned in the Introduction.

This framework applies both to the contemporary events of our time and more widely to the historical ways in which movement has been distributed and organized into various patterns or regimes. In other words, being is not just in motion because of a few big events at the turn of the twenty-first century. Such events, with their dramatic and epoch-defining mobility, are simply the historical occasions that force us to see the importance of something that has been there all along, though previously hidden or explained by something else. What is at stake in this book, therefore, is the invention of a conceptual framework that would allow us to describe and identify a whole new dimension or aspect of present and previous beings from the perspective of movement. This methodological perspective is not just a matter of novelty, although its novelty is also important. It is also a matter of becoming equal to the historical events of our time that increasingly force us to think about things in ways we never did before. What is at stake, therefore, is not simply a more appropriate ontological description of current events but also a unique insight into a certain hidden or occluded dimension of Western ontology.

On the other hand, the second important contribution of this book is to turn this kinetic perspective back on the practice of ontology itself. If being is in motion, then

the act of doing ontology itself is also a motion and must be included in the analysis. What are the material-kinetic conditions or regimes of motion under which a specific ontological inscription itself has been performed, and how does it relate to the kinds of descriptions of being it generates? Even in the rare cases where philosophers have taken movement seriously, or where mobilities scholars have taken ontology seriously, no one has done a kinetic analysis of ontological practice itself. In fact, no one to my knowledge has even attempted to write a history of the philosophy of movement. Books abound that contain philosophical histories of time, space, eternity, and even force—but not of motion. Motion, for the most part, has been treated as a nonphilosophical category best left to physics.

Those who have attempted to treat motion as a more philosophical or ontological category have paradoxically not treated their own ontological practice as *in movement*, or as part of any larger historical pattern of motion.[1] Any ontology of motion that follows such traditional methods of inquiry into the nature of "being qua being" risks falling back into the same ahistorical, fixed, and immobile methods of older static ontologies. Even if the universal nature of being is paradoxically said to be "in motion" forever and all time, such a claim, by its very structure, pretends to be outside the movement of its own historical description, and therefore not in the motion it describes.

This is not what *Being and Motion* does. The production, distribution, and consumption of this book itself is the performance of the historical and material conditions described in this book. Ontology is entangled with, and emerges from, its material conditions. All the old historical techniques of inscription described in Book II—speech, writing, books, and keyboards—merge and mix together in the hybrid performance of contemporary ontological practice. For example, the ontological practice of this book has taken many kinetic forms. It was spoken about with colleagues and drawn on classroom walls. It was inscribed in written language. It was written by hand in a series of seven manuscript notebooks. It was typed out on a keyboard and put into digital form. It was printed out by a printing press. It was then circulated verbally, digitally, and in print among peers and editors, who then made their own verbal, written, and digital marks. It was put into circulation around the world and into the hands and computers of readers who will perhaps talk about it, make marks in the margins, copy and paste it, and so on. All this material-kinetic activity is part of its historical ontological practice, but it remains typically occluded in most philosophical ontologies. The practical activity of doing ontology is typically considered to be nonphilosophical because it is too material, too kinetic, too historical, or too technical to have any bearing on the purely abstract description of being qua being.

Therefore, the second novel contribution of *Being and Motion* is to show that the act of doing ontology itself is a historical, material, and kinetic one. Ontological description is not a passive representation—it is real material coproduction. Furthermore, different patterns of motion, and different tools of inscription, are linked to very different historical descriptions of the nature of being, as we will see in Book II.

These are the twin theses of this book. The first thesis is particularly difficult because it refers to the philosophy of movement in its most general conceptual

formulation. This is challenging because, although examples are given from the domains of politics, science, and art, in order to show the concepts in action, the full scope and application of the framework to these exemplified domains requires book-length treatments for each domain. Since this is an ontology, the reader should expect to find in these chapters of Book I a relatively original, internally consistent set of self-referring concepts, vocabulary, and diagrams that offer a new way of thinking through the primary questions of ontology: quality, quantity, relation, modality, identity, unity, causality, subject, and so on.

So, aside from the occasional examples taken from the companion volumes on politics, art, and science, and used to clarify various points, Book I will not be drawing on the ever-growing range of empirical studies of movement and mobility from other disciplines and domains because I have already done this in the companion volumes.[2] Developing a systematic conceptual framework that responds to all the demands of ontology is no small task. There is thus no way for this book to both develop such a framework *and* apply it across all the empirical areas it could possibly be applied to *and* still be able to prove the second major thesis about the material historicity of ontological practice. Thus, the primary focus of *Being and Motion* will be on ontology and the history of Western ontology. If the reader is curious to see how the main concepts of this book are applied and developed to domains outside ontology, please see the companion volumes.[3] Furthermore, if the reader is curious to read more about the other limits that define this project, he or she can peek ahead at the Conclusion of this book for a list of its four major limitations and future projects.

HISTORICAL METHOD

The primacy of motion is a unique ontological perspective in Western philosophy. Throughout history, being has been understood in many ways, but rarely has it been said to be, primarily and above all, *in motion*.[4] However, defined as it is by constant movement and mobility across every major area of social, scientific, and aesthetic life, the present age is, if not the first, then certainly the loudest to proclaim "*omnia moveri!*"

The central question of this book, therefore, is, "What do these events reveal about the nature of reality such that it is capable of producing this present?" Now that such a present has emerged, it has become possible in a way it was not previously to inquire into the conditions of its emergence. In other words, the present reveals something new about the historical nature of being so far: what it must *at least* be like to be defined by the primacy of motion and mobility. At no point in history have beings ever been anywhere near as mobile as they are today, so what does this say about the nature of our reality? If being is defined by the historical primacy of motion today, yet existing ontologies are not, then we need a new ontology. *Being and Motion* aims to produce such a conceptual framework based on the historical primacy of motion.[5]

The Present

The present, however, is not a homogenous, closed set of things and dates. The present is not a presence but an open process. So by "our present" I simply mean "the flux of things and dates in the twenty-first-century so far." We live in an age increasingly defined by movement and mobility, but not exhaustively or reductively so. The present cannot be fully grasped or totalized by any single epochal concept. Motion is not the essential core of the present. It is simply one aspect of the present—albeit an increasingly prevailing and powerful "anchoring point" worthy of our critical attention.[6]

At least two consequences for this project follow from this definition. First, since the present is contested and multiple, what seem like important events at the time (global migration, quantum field theory, and digital media) can turn out retroactively to have not been important. But even further along they may become, retroactively, important again. It is not the object of this book to proclaim anything about what future generations may or may not think of the events of our time—but rather to show what they reveal to us *now*. This project, and this book in particular, is thus not a view from nowhere but a specific view from the early-twenty-first-century under the conditions described above.

If there is a philosophical deduction of motion in this book, it is not an epistemological one like Kant's nor an existential one like Heidegger's but rather a kinetic one. The concepts of flow, fold, and field deduced in Book I are the minimal features needed to describe the historical being of motion. They are the features that must be the case for being to be in motion today. Therefore, the motivation for this book and the others connected to it is tied, by necessity, to contemporary events that most people, including me, currently believe are and will be defining events for the twenty-first century. The importance of these events is thus not fundamental but historical: Relative to what we currently know, these things seem important enough to challenge previous social, scientific, and aesthetic paradigms—and to expose a new kinetic one.

The Past

Similarly, the past is not an objective set of fixed events. Depending on the conditions of the present, different aspects or dimensions of the past will appear and disappear. New lines of development between the past and the present can be put forward on the basis of new social, scientific, and aesthetic discoveries or events that emerge in the present. For example, once Newton discovered the inverse square law of gravity, this appeared to be true not only for his present, but also for the entire past as he and others knew it. Newton and others then told a retroactive evolutionary story about the development of this truth, just as Hegel told a similar social story about the development of human sociality into its highest present form: the nation-state. In both cases, however, their error was the attribution of necessity, causality, and finality to

these developments. From the perspective of the present, the entire past appeared as one or more long lines of retroactive precursors.

As the present changes, however, so do the lines of the past that lead to it. This does not mean that history is illusory and false but rather that it is composed of multiple real coexisting and divergent historical series. There is no other starting point outside of the present from which to begin. Luckily, the present is divergent enough to accommodate many lines. This book is not exempt from the limits of the present—even if it does not rely on necessity, causality, and finality for its explanation. As a historical ontology, *Being and Motion* simply adds one new and previously hidden historical trajectory to the others: the line of motion. Once we discover motion at the core of some of the most important social, scientific, and aesthetic events of our time, we can see that it was there all along.

The Future

The future is that which is not yet. As such, it bears no necessary resemblance to the present nor the past. This has two consequences for *Being and Motion*. First, it means that there can be no ontology of the future—unless we mean by this some paradoxical ontology that simply exposes the impossibility of fundamental ontology. This book remains entirely agnostic about the being of the future and about any description of being that would hold true forever. The ontology of motion developed here pertains only to a few major dimensions of the present, and to what these reveal about the historical practice of ontology.

Second, *Being and Motion* remains open to the possibility that new events in the future will reveal yet another hidden dimension of the past that could in turn re-describe everything that appeared to be in motion from the perspective of the early twenty-first century. However, it is also possible that this might not happen. We will see.

In either case, no historical ontology, and certainly not this one, could ever foreclose in advance the possibility of another in the future, no matter how apparently seamless the historical line. It is also true that every voice speaks by the omission of others. Even as the present work of historical ontology gives voice to a previously occluded region of being (motion), it also leaves out other regions and other histories. This is not a reason not to do a new historical ontology, but it is a reason to multiply such histories—of which this is only one.

The primary inquiry of this book is therefore ontological but not foundational. It is historical. In other words, it does not aim to identify the absolute and immutable structure of being forever and all time (being qua being). It rather seeks to identify, given a particular historical emergence, the real conditions of that emergence—*really* constitutive of ontological practice itself. Being is surely much more than motion, but no matter what else it is it must *at least* be in motion in a way that makes a present like ours possible.

The contribution of *Being and Motion* is to locate a new historical ontology of motion—a minimal condition that, from the perspective of the present, appears to have always been a hidden dimension of the past. The aim is therefore to take one of the most important (not the only or essential) features of contemporary reality (motion) and use it reinterpret the dominant notions of ontology, such as space, time, force, quality, quantity, relation, and so on. From the vantage point of the present, the past can now be reinterpreted anew, without foreclosing the future.[7]

Accordingly, the method deployed by this book cannot be a naive realism in which the discovery of the contemporary primacy of motion gives pure access to being in itself. Rather, it is a kind of historical realism of the *minimal ontological conditions* of the emergence of the present itself. It is therefore also a *critical* or *minimal* realism in the sense in which being is interpreted only with respect to that aspect of previous being that must at least be the case for our present "to have been possible" (i.e., actual). Therefore, the method deployed throughout this book is neither realist nor relativist in their traditional senses, but rather *minimally, critically*, or *historically* realist.

The question is not what the conditions of the human mind must be for the present to be what it is but rather what *previous reality itself* must *at least* be like such that the present and its ontological inquiry have come to be defined by the primacy of motion. The question is not what the conditions of language, the unconscious, economics, power, and so on must be like for the present to be *possible* but rather what previous being must at least be like so as to render actual these anthropic structures in the first place.[8] Without a doubt, contemporary reality is shaped by multiple human structures, but these structures are in turn conditioned by other real, nonanthropic material structures that precede and constitute them. The two then work on each other in turn, *really co-constituting each other*. The aim of this work is to locate the real conditions necessary for the emergence of contemporary being in motion.[9]

To be absolutely clear, *Being and Motion* is not seeking the minimal *fundamental* conditions of all reality (past, present, and future) such that motion appears as primary today but rather only the minimal *historical* conditions (of the past) for the present. As Marx writes, "All the mysteries which lead theory to mysticism find their rational solution in human practice and in the comprehension of this practice."[10] But human practice is never reducible strictly to anthropocentric structures. *Being and Motion* is a strictly historical and regional ontology of ontological practice itself, limited only to the present and the past—without any ontological claim on the being of the future. Following Marx's retrograde reading of history, we can say that it was precisely the contingent appearance of increased mobility in the present that makes possible a new (and no less real) history from the viewpoint of that event: a historical ontology of motion.

CHAPTER 2

Ontological History

If the critical events of our age are defined by the primacy of their motion, then we need a new set of concepts appropriate to this motion. However, if being is in motion, then so is ontological practice itself. The observations, descriptions, and inscriptions of ontological practice are themselves *transformative* and *kinetic* actions. They are in motion. There is no neutral activity of representation, contemplation, or communication that does not already introduce motion into the process of ontological description. Thus, any ontology of motion that does not have a theory and history of the structure of its own kinetic practice remains yet another universal claim about being qua being as problematic and metaphysical as any other immobile ontology. The mysteries of ontology can therefore only be solved by the practice of ontology itself.

For example, when philosophers describe something, they always do so through some material process of inscription—language, writing, books, typography—that has a material-kinetic structure that changes something about reality through its usage. The invention of language, writing, and the printing press, for example, all introduced real kinetic changes that are not independent from the ontological descriptions inscribed on them. All kinds of social, sensory, and quantitative factors contribute to the material conditions within which an ontologist describes reality. Ontological description, therefore, does not stand isolated apart from the whole network of material, social, and technical motions within which the description is inscribed. How ontological practices describe and inscribe the world is bound up with the way people and things move in it, and vice versa. The consequence of this important kinetic insight is that the ontological apparatus of description and inscription is itself an aspect or dimension of being's motion.

This poses a real problem for traditional ontology, which tends to bracket its own material and historical agency and conditions in favor of pure concepts. However, if ontological practice is part of reality and introduces changes into the reality that it describes, then its descriptions cease to be representations and become *kinetic aspects or dimensions of reality*. Ontological practice is not a view from nowhere; it is situated in the moving present along with everything else. Therefore, the ontology

of motion requires not only a new conceptual framework for describing the motion of beings but also a kinetic reinterpretation of ontological practice itself and of its historical kinetic conditions of emergence. If ontological practice itself is a kinetic activity, how does it move? How do its ontological descriptions and inscriptions circulate within various patterns of motion? *Being and Motion* provides a historical and kinetic answer to this question.

This second major thesis, that ontological practice is itself a historical and kinetic activity, therefore makes an important intervention into the study of ontology more broadly. What is at stake, therefore, in the development of an ontology of motion is a solution to two major problems in ontology: stasis and reductionism.

ONTOLOGICAL STASIS

The first problem is that ontology has been understood as the saying or thinking of the unchanging and static properties of being *in itself*. In this way, ontology has been relegated to serving a secondary or representational function. The structure of being remains unchanging and fixed according to an immutable formal structure that we mobile, changing humans glimpse through epistemological, linguistic, structural, or mathematical formalisms. In other words, the introduction of an ontological division between things as they are *for us* and things as they are *in themselves* is at the heart of the problem of a static being and a representational saying of it. Once the division is introduced, there is no way to get the "for itself" and the "in itself" back together again.

Subjectivism and metaphysics are two sides of this same intractable problem. On the one hand, subjectivist philosophies argue that as humans we have access only to our sensations of nature through various anthropic, linguistic, economic, unconscious, and historical structures—as it is *for us*. We have no access to what being is *in itself*. Any descriptions of being in itself are by nature completely speculative, and we must remain agnostic toward them. Although subjectivism claims to have no ontological access to being in itself because of the finite anthropic structures of thought, society, language, and so on, it must also accept as the precondition of such structures at least one minimal ontological condition: that being in itself must be structured in such a way that it can produce the self-affection of the anthropic subject, since this is the condition for human sensation, experience, and philosophical practice as such.[1] Without ontological self-affection or differentiation, there can be no anthropic experience. In this way, subjectivism falls into an uncritical metaphysics.[2]

On the other hand, metaphysical positions argue that humans have direct, unmediated access to mind-independent reality as it is in itself. In this definition, ontology is a speaking of being qua being that represents it and gets it right. In this case of naive and uncritical metaphysics, we have the inverse problem of subjectivism. In the first case, the "for itself" is cut off from the "in itself" and ends up assuming a metaphysical position. In the second case, the "for itself" can, through proper mediation, come to know the "in itself" but ends up assuming the existence of something called "mind-independent reality," which by definition exists independently

of the mind and must therefore remain in some sense distinct from the mind, qua independent. If the "in itself" ever made itself fully known to the mind, it would no longer be independent from the mind. Naive metaphysics thus falls back into subjectivism and idealism.

HISTORICAL ONTOLOGY OF ONTOLOGY

In response to the problem of a static and representational view of ontology, I argue that if we want to understand what ontological practice is, there is no need to introduce a metaphysical division between being and our description of it. Since we ourselves are also beings, as are ontological descriptions, we can examine ontological practice from the perspective of what being *does* in the act of description and inscription. Thus, ontology should no longer be understood as a static, neutral, or total description of being in itself, but must be understood *kinetically* as an action or material practice that *really does something*.

In other words, this book does not adopt an absolute ontological position from which to dismiss certain ontologically "incorrect" subjective and metaphysical claims about being for or in itself. It is neither a critique of anthropic constructivism nor a deconstruction of metaphysics. This is because its domain of inquiry is not the nature of being in itself, but rather the historical practice of ontological description itself. Thus, the core philosophical presupposition of the ontology of motion is strictly historical (the primacy of motion in the present) and neither metaphysical nor implicitly subjective.

Being and Motion does not waffle between metaphysics (i.e., fundamental ontology, or being-qua-being) and subjectivism (i.e., correlationism, or being-qua-thought) but tries to develop a third way. Since the ontology of motion does not claim anything positive or negative about the future, it cannot be, by definition, fundamental ontology. However, since its claims about the being of motion extend well before the advent of human life and posit motion as a minimal feature of previous beings, it also cannot be, by definition, correlationist—since correlationism has no access to anything beyond present human thought, or at most all previous human thought. *Being and Motion* is strictly and by definition a regional ontology of motion, though it includes the largest possible region of being, excluding only the future.[3] Therefore, when "ontology" or "being" are mentioned here, please read: "the strictly historical study of being up to but not including future being."

Rather than putting forward a theory of being qua being or even an epistemological theory of being qua thought, this book offers a description of the minimal ontological commitments entailed *by the very kinetic practice of ontological description itself*. Given that the act of ontological description is a *real action* that changes reality in some way, and that the act of inscription relies on the material-kinetic activity of a historical media of inscription, a realist theory of motion is presupposed by both.

What is at stake in *Being and Motion* is therefore an immanent critique of ontological practice and the discovery of its minimal or regional, but no less ontologically real, material conditions. The theory of ontological practice presented in this

book is thus a kind of historical ontology of ontology, but not, strictly speaking, a metaontology.[4] Metaontology presupposes a theory of being qua being from which to order and evaluate other ontologies. In contrast, *Being and Motion* puts forward a strictly historical ontology of the present by which previous ontological practices can be interpreted but without making any claims about the absolute nature of being in itself.

Admittedly, this may seem like an unusual project, and one hardly worthy of the grand title *Being and Motion,* since the crux of its argument is quite different from what is typically considered to be ontology or even history. In the end, however, this book remains "ontological" insofar as it offers nothing less than a wholesale redefinition of all the major categories of traditional ontological inquiry—space, eternity, force, time, quality, quantity, relation, and so on—as well as ontological practice itself, from the perspective of motion.

ONTOLOGICAL REDUCTIONISM

The second problem this book aims to overcome is that of ontological reductionism. In particular, there are two kinds of ontological reductionism that are of concern here. The first, and more common, is an idealist reductionism which claims that the contents of ontological descriptions are accurate mental representations of being in itself, regardless of the material-kinetic media of inscription. For the idealist, ontological practice is entirely reducible to the *thinking* of being. The material and historical conditions by which such thoughts are inscribed as content on a surface are completely irrelevant to what can be thought about the nature of being. In other words, the contents of ontological description and inscription are stripped of their materiality and reduced to the pure thought of being.

At least one major problem with this move to universally identify thought and being, in addition to the antinomy of naive metaphysics described above, is that the thought of the ontologist engaged in such an activity is not directly expressible to anyone else without some medium of inscription or communication. The history of ontology cannot be studied by looking at the *thoughts* of dead philosophers, scientists, and theologians but instead requires a material study of the *graphic inscriptions* they have produced. Thought is not something that can be studied independently of the material and graphic conditions of that thought.

The second kind of reductionism with which this book is concerned is a technological, material, or media reductionism, which claims that any ontological description of being, including thought or any other sensation, is a simple product of the technological or media conditions through which ontology expresses itself. In its most extreme formulation,[5] everything becomes media, and all human culture, including ontological practice, is determined by the form of the medium of inscription. In this case, ontological practice says or thinks what it does about being simply because of the formal structure of the media used to inscribe it. Contrary to anthropic idealism, media materialism argues that humans are not the creators of technology, but that technology develops autonomously, *using* humans as *its medium*. This kind

of reductionism goes too far in the other direction from the first. Instead of the ontological content or description explaining away or neutralizing the form of expression or inscription, the media form ends up completely explaining away or neutralizing the content of description.

ONTOLOGICAL GRAPHISM

The problem with both these kinds of reductionism is that they operate under a metaphysical presupposition of a division between humans and nature. The relationship between description (idealism) and inscription (materialism) is poorly understood as one of unidirectional causality: Does the human description of reality cause us to make new technologies of inscription (instrumentalism), or do new technologies of inscription determine in advance that very description in the first place (determinism)?

Reductionism thus relies on the very division it tries to resolve. If nature is the movement and organization of matter, and if technology is the strictly human organization of matter, then the problem becomes clear. If nature creates humans, then humans themselves become the technologies of nature. The human body becomes a technical machine created by nature for increasing entropy. Humans in turn create their own kinds of technical objects, such as clothing and tools. However, if we grant that the technologies created by nature, namely humans, and the technologies created by humans both in turn have some transformative effects on their creators (nature and humanity), then nature and humanity equally become the technologies of technologies. In other words, if we admit a recursive determination between nature and humanity via technology, the distinction collapses entirely.[6] An ontological difference between nature, humanity, and technology cannot be sustained. The whole reductionistic debate between instrumentalism and determinism starts from faulty assumptions.

Therefore, in *Being and Motion* there are only kinetic regimes of collective transformation, coordination, or synchronization, not causalities (linear or otherwise). Descriptive content and inscribed form are simply two collectively coordinated aspects of the same kinetic regime mutating through history. These regimes are neither strictly natural, human, or technological, but *kinetic*.

Accordingly, if ontological practice is part of this mutual kinetic transformation, then it is in motion and should thus be redefined kinetically. The word "ontology" comes from the Greek word ὄντος, *ontos*, "to be," plus the Greek word -λογία, *-logia*, "study, logic, or saying," and it has been traditionally interpreted as the study or speaking of being qua being. Alternately, however, the Greek word *logos* also comes from the root word λέγω, *légō*, meaning "to pick up, gather together, to choose, to arrange."[7] Thus, contained in the roots of the traditional definition is also the key to a more kinetic definition of ontology—one that highlights the *material activity* of picking up, selecting, gathering, drawing together, and arranging of being. The word *légō* explicitly emphasizes the kinetic activity of the hand, and thus of gesture, that picks up and puts together: graphism.

Following this alternate definition, we can offer a reinterpretation of ontological practice as a kinetic activity comprising two distinct but interrelated gestural or "kinographic" actions: description and inscription. Ontology is "de-scriptive" in the sense in which it is a picking out and picking up that re-moves (de-) something from a previous graphic or material arrangement, but also "in-scriptive" insofar as it produces a new gathering together (in-) of the graphic. By this definition, an ontological description can no longer be understood as a representation or reflection of being in itself in thought. Description is active and creative. It selects something from the world and removes it from where it was already inscribed or gathered. Once it has been removed from one region, it can appear as the "content" of a new form gathered on a surface: the inscription. A bit of charcoal, for example, can be removed from a campfire and used as a writing implement, leaving a trace of itself on a new surface of inscription—a wall. In this sense the Greek word *logos* should be understood as a dimension of the more primary graphic and kinetic act of the hand that gathers and marks. Ontology is thus fundamentally kinographic.

Description

A "description" is a system of marks and signs arranged on an inscription surface. Different signs do not represent or have any resemblance to being in itself, but are arbitrary marks gathered from elsewhere and placed in a relation on an inscription surface that are kinetically coordinated with certain material actions or gestures in nature.[8] Although descriptive signs today seem obviously and necessarily connected to sensory and material beings, all those connections and coordinations had to be historically created (as will be shown in Book II). They were not already there.

In other words, the understanding of ontological description as a representation of being is a historical artifact, not an essential feature of ontological practice. Because it is a historical artifact, we can give a historical and kinetic analysis of the emergence of the practice of ontology "as representational." This is what Book II does.

Inscription

"Inscription" is the process of gathering descriptive marks and signs onto a recording surface. As such, it is impossible to separate description from inscription. To speak of one or the other is to speak of two sides of the same thing, not two different things or parts of a whole. Surfaces of inscription are rarely understood to be representing anything about the nature of being, but are more often reduced to utilitarian instruments for communicating information. However, just as description is nonrepresentational, inscription is noninstrumental. Inscription surfaces—bodies, tablets, books, and so on—all have their own material-kinetic structure that really introduces new motions into the world. Technologies of inscription do

not represent or facilitate human needs but are an articulation of the larger kinetic regime in which those needs emerge *at the same time*. There is no discoverable system of simple causality between human utility and technical innovation—there is only historical coemergence and constant conjunction or coordination, which appear afterward as causally connected. Insofar as inscription is tied to material technologies, it is both kinetic and historical and in no way offers a view from nowhere.

What distinguishes ontology from other kinds of graphism is that it privileges or focuses on the immanent relation between the descriptive signs and the inscriptive surfaces themselves. One is not the cause of the other. They are two aspects of the same kinographic process. Together, ontological description and inscription produce a written document whose kinetic coordinations follow the same dominant pattern of motion as the other major graphic events of its time—not by mimesis but by resonance or synchrony.

Social motions, for example, are described by flows of bodies and inscribed by borders, aesthetic motions are described by affects and inscribed in images, and scientific motions are described by quantities and inscribed in objects—but ontological motions are described by graphic signs and inscribed on recording surfaces.[9] During each major historical period, the same dominant pattern of motion is produced in each domain, according to its own graphic elements.

Historical Mixture

Each domain has its own kind of descriptive content and inscription, but they all mix together in history. Each also has dimensions of the other. Literature, for example, makes graphic inscriptions on recording surfaces such as books, but the main aim of aesthetic practice is to produce certain kinetic patterns of sensation through images. By contrast, the privileged function of ontology is not to produce sensations on our bodies, although it also does this, but rather to produce a kinetic pattern of marks on a surface.

Since each graphism includes aspects of the others, a metaphysical or absolute division between politics, art, science, and ontology is untenable (see Table 2.1). Everything can be examined according to each of these four dimensions at once.[10] However, this should not prohibit us from methodologically separating out the

Table 2.1. KINOGRAPHY

Domain	Description	Inscription
Politics (kinopolitics)	Bodies	Borders
Art (kinesthetics)	Affects	Images
Science (kinometrics)	Quantities	Objects
Ontology (kinographics)	Signs	Surfaces

different kinds of graphisms that define each dimension of reality, even if they are always mixed in practice and history. Only when they have been separated out is it possible to see them *as a mixture* of distinct aspects or dimensions of being. This analytic task is the contribution of philosophy.

Ontology, therefore considered on its own, is philosophically different from the other domains simply because it tends to privilege or focus its study on the internal and immanent relations of kinographic signs gathered on a recording surface, and not on the affects, social movements, or quantities that are related to them. This does not make ontology any more "pure" of a domain than the others. Just because ontology privileges the graphic over the affective, social, or quantitative does give it any special primacy. It is simply a different domain of inquiry.

Ontology is the graphic movement of signs and surfaces that create a regime of motion. This is not a representation but a real material creation. It is a real practice and performance. The descriptive content creates an internally consistent material sign system of kinetic relations, while the surface of inscription creates a kinetic structure for recording these signs. Both resonate with or follow the same dominant regime of historical motion of their age, alongside the other domains of social, aesthetic, and scientific practice. Through this process, ontology gives a descriptive name to the inscriptive pattern of being's motion as it appears within the dominant regime of motion. The great names of being are thus each connected to a different regime of historical motion, which their ontologies describe.

These regimes are neither strictly chronological nor merely a priori universal "types." The real movements of history contingently produce certain nonuniversal types or patterns of motion. Once each of these patterns emerges, it can be reproduced, altered, mixed, or destroyed through history.

PLAN OF THE BOOK

The plan of *Being and Motion* is as simple as it is ambitious: to develop an ontology of motion. This has two different but complementary objectives following its two core theses: (1) the development of a transdisciplinary conceptual framework, or ontology, useful for describing the motion of beings; and (2) a historical ontology of the motion of ontological practice itself. These two tasks cannot be separated. The second relies on the conceptual framework of the first, just as the first relies on the historical conditions and movement of the second. Separating these two kinds of inquiry from each other results in either ahistorical idealism (the first without the second) or historical constructivism (the second without the first). *Being and Motion* is therefore divided into two books: one focusing on the ontology of motion, which we will call "kinology," and one focusing on the descriptive and inscriptive motions of ontological practice itself, or what we will call "kinography."[11]

Kinology

The primacy of motion and mobility across several major domains at the turn of the twenty-first century has forced us to take motion seriously—not only for understanding those events, but also for understanding a previously subordinated dimension of all previous events that has now become visible. For example, the advent of the modern clock and the rise of industrial capitalism had similar historical effects on ontologies of the nineteenth and twentieth centuries with respect to the primacy of time. The question today, however, has shifted from time to motion—that is, given the novel emergence of the primacy of motion, what then must be the real minimal ontological features of being such that it is *capable of being in motion*? This is the fundamental question of Book I. In brief, the answer to this question is a deceptively simple one, but from it numerous consequences follow. The historical condition for the primacy of motion in the present age is that being must flow. From this initial thesis, an ontology of movement is possible.

Theory of Motion. The ontology presented in Book I is thus organized around three major concepts, which together form the theoretical framework for describing the motion of beings. The first concept, from which the others are derived, is that being is composed of *flows*, or continuous movements. As beings flow, they intersect with one another, forming confluences, and bend back over one another, forming folds. The second concept, therefore, is the *fold*. The outcome of these continuous intersections and folds is a relative kinetic stability. Once these folds occur, they can be entrained together into a circulatory system or field that orders and maintains a set of internal kinetic synchronies between them. The third concept therefore is the *field* of circulation. Flows, folds, and fields are the *historically* necessary conditions for being in motion.

A full description of each of these three concepts, their relations, and their consequences for important issues in ontological inquiry are developed in Book I. Together, they form the minimal theoretical framework entailed by the contemporary revelation of the primacy of motion, and provide the conceptual tools for reinterpreting the motion of beings both past and present more broadly.[12]

Kinography

While Book I deals strictly with the kinological conditions of moving being, Book II deals with the way in which these conditions have been distributed into specific kinographic regimes of description and inscription. While Book I is more conceptual because it describes the historically ontological commitments of moving being generally, Book II is more concrete, material, and historical, since it examines the specific graphic arrangements or regimes of motion that structure ontological practice itself.

In other words, although Book I comes first logically and conceptually, Book II comes first historically as the material and graphic conditions for the production of the logical concepts of Book I. As Marx says,

> Of course the method of presentation must differ in form from that of inquiry. The latter has to appropriate the material in detail, to analyze its different forms of development and to track down their inner connection. Only after this work has been done can the real movement be appropriately presented. If this is done successfully, if the life of the subject-matter is now reflected back in the ideas, then it may appear as if we have before us an *a priori* construction.[13]

But we do not have an a priori construction, only a material and historical one. Only because we stand today at the relative end of this long historical process are we now able to invent concepts appropriate to the process itself. Since this is a work of philosophy, and the owl of Minerva flies at dusk, we begin with concepts to help explain the things that have made us what we are today. In short, the question of Book II is this: What are the kinetic conditions under which ontological practice itself describes and inscribes reality?

The history of ontology has always taken specific forms. Being has been given several major historical names: space, eternity, force, and time. Each of these names has been used historically to provide a description of the fundamental nature of being qua being. At some point each has also been used to explain all the others, and has thereby justified its own claim of ontological primacy. At certain points or ages in history, these names take on a more widely accepted status resonant with the other relevant inventions and discoveries in the domains of politics, art, and science. Then, at other times, the same names wane with the emergence of a new descriptive name that comes to explain the previous names. This does not mean that there is some developmental logic of ideas at work here that precedes the historical battle and politics of truth. It only indicates a shifting and mobile battleground as these names are redistributed, revalorized, or retheorized and mixed together in new relations or descriptive primacies alongside various other historical patterns of motion. New combinations and hybridizations occur among the regimes until we arrive at the present, the most hybrid and complex so far, not de jure but de facto.[14]

The thesis of *Being and Motion* is that the events of the twenty-first century have introduced yet another prevailing, but not exclusive, historical name for being: motion. Just like the others, this name is capable of describing all the others, and thereby justifying its own claim to historical ontological primacy. Or at least this is what I would like to argue. In fact, only by showing precisely such an explanatory power over all the previous ontologies can motion be said to have proven its historical equality with these other names—which have all done precisely this. To claim that being is in motion is therefore to claim that space, eternity, force, and time are all ontologically describable by motion. It is an ambitious claim, and it is the core thesis argued in Book II.

In one sense, *Being and Motion* is not quite playing the same game as other ontologies, since its ultimate claim is not that all previous names for being are wrong and it alone is right and primary forever and all time. Unlike the other great names in the history of ontology, motion is not another name for being qua being. Since it makes no claim to the future, it does not do battle on the same grounds. It is

ultimately a historical and regional ontology, rooted in the present, and thus can at most lay claim to a single dimension or historical trajectory in being leading up to a certain region of the present. Such a "regional realist ontology" is one possible answer to the question of what can be done at the "end of metaphysics" without returning to metaphysics (speculative realism), or simply destructing it (deconstruction), or abandoning it altogether (constructivism).

In another sense, though, *Being and Motion* is on the same ontological battleground, insofar as every other great historical name for being has only ever been just that: a historical and regional ontology for its time. And ultimately, as I want to argue, the ontology of our time is an ontology of motion. This is a big claim, and to succeed it has to be demonstrated with an appropriate historical depth and breadth that occupies all of Book II. More specifically, the thesis of Book II is composed of three interlocking theses.

First Thesis. The history of ontology can be grouped according to at least four major historical periods (prehistoric, ancient, medieval, and modern) in which a single name (space, eternity, force, time, respectively) comes to predominate the ontological descriptions of the age, even if it is not the only one in use.

Second Thesis. During these same historical periods, a certain technology of inscription (speech, writing, books, typography), used to write the ontological descriptions, also rises to dominance.

Third Thesis. Description and inscription are not derived from one another. Rather, during each historical period, the dominant ontological description and the dominant technology of inscription have the same kinetic pattern or regime of motion, which allows us to put forward an original *kinetic ontology* of space, eternity, force, and time.

HISTORICAL RATIONALE

Put succinctly and concretely, the grand labor of Book II is therefore to connect the *ontological names* of space, eternity, force, and time to their *historical descriptions* in prehistoric mythology, ancient cosmology, medieval theology, and modern phenomenology; to their *graphic inscriptions* in speech, writing, books, and typography; and to their respective *kinetic patterns* of centripetal, centrifugal, tensional, and elastic motion (see Table 2.2).

Together, these three theses support the core thesis of Book II: that ontological practice itself is historical and kinetic. This thesis has three consequences, which are the *rationale and motivation for the historical labor of Book II*:

1. It shows that all the great names for being rise and fall historically and are therefore on the same historical footing with a regional ontology of motion. In other words, all the previous names of being are tied to their historical techniques of inscription and thus to certain kinetic patterns of motion and mobility. Therefore, the history of ontology is also a history of motion.

Table 2.2 HISTORICAL ONTOLOGY

Ontology	Space	Eternity	Force	Time
Kinos (type of motion)	Centripetal	Centrifugal	Tensional	Elastic
Logos (type of description)	Mythology	Cosmology	Theology	Phenomenology
Graphos (type of inscription)	Speech	Writing	Book	Keyboard

2. This allows us to analyze the contemporary mixture of their kinetic structures, insofar as they continue to circulate and persist in the present under the same names of space, eternity, force, and time in contemporary ontology.
3. Most importantly, the historical analysis of these four major periods and their dominant names in Book II allows us to develop original kinetic theories of space, eternity, force, and time that form the second set of major concepts in the ontology of motion.

It is only through the historical labor of Book II, therefore, that the second half of the core concepts of the ontology of motion can be developed: a kinetic theory of space defined by centripetal motion, a kinetic theory of eternity defined by centrifugal motion, a kinetic theory of force defined by tensional motion, and a kinetic theory of time defined by elastic motion. In this sense, the rationale for Book II is to produce an immanent critique of the history of ontology that reveals, at the same time, original kinetic descriptions of space, eternity, force, and time. These form part of *the conceptual core of the ontology of motion itself*.

In short, Book II is not just a history in the same way that Book I is not just an ontology. Book I is a historical ontology—which is limited to the conditions of the present—and Book II is an ontological history—which derives its ontological concepts from the historical conditions of its own ontological practice. They are two inseparable sides of the same ontological project.

However, before the finer details of the theory of motion can be put forward, we first need to lay out the methodology of its formulation and application. Therefore, we now move on to the philosophical, realist, and materialist orientations of the ontology of motion.

NOTES

INTRODUCTION I

1. This is an ambitious claim and requires more than the few paragraphs I have offered to prove. In fact, each area (politics, science, and art) requires its own book-length argument showing the historical and contemporary importance of motion: *The Figure of the Migrant, Theory of the Border, Theory of the Image*, and *Theory of the Object* (the latter two in development). In one sense, *Being and Motion* should be read first, because it contains the kinetic-theoretical framework in its most general conceptual formulation, but in another sense it should be read last, because its inquiry is motivated by the contemporary events described in the other works. The domains of art, science, politics, and ontology have been selected here as extremely broad areas, similar to the traditional ontological categories of quality, quantity, relation, and modality, respectively. These broad areas are inclusive of many other areas, termed "cultural," "economic," "social," "epistemological," and so on. In theory, every historical practice one could name can be considered equally with respect to its qualitative, quantitative, relational, and modal aspects. This is a huge task that will be subject of future works and is therefore not part of the focused inquiry of this book, which is ontology.
2. With the rise of home foreclosures and unemployment, people today are beginning to have much more in common with migrants than with certain notions of citizenship (grounded in certain social, legal, and political rights). "All people may now be wanders," as Zygmunt Bauman notes in *Globalization: The Human Consequences* (New York: Columbia University Press, 1998), 87. And "[m]igration must be understood in a broad sense," according to Nikos Papastergiadis in *The Turbulence of Migration: Globalization, Deterritorialization, and Hybridity* (Cambridge: Polity Press, 2000), 2.
3. In total number (1 billion, or 1 in 7 people), and as percentage of total population (about 14%), according to the International Organization on Migration, *The Future of Migration: Building Capacities for Change* (*World Migration Report 2010*, https://www.iom.int/world-migration-report-2010), and The World Health Organization (http://www.who.int/migrants/en/).
4. As of 2010, there were 215 million international migrants and 740 million internal migrants, according to the United Nations Human Development Report 2009, *Overcoming Barriers: Human Mobility and Development* (p. 21), http://oppenheimer.mcgill.ca/IMG/pdf/HDR_2009_EN_Complete.pdf.
5. United Nations, "Trends in International Migrant Stock: The 2008 Revision" (United Nations database, POP/DB/MIG/Stock/Rev.2008), http://esa.un.org/migration; US National Intelligence Council, "Global Trends 2030: Alternative Worlds," 24, http://globaltrends2030.files.wordpress.com/2012/11/global-trends-2030-november2012.pdf. On the theoretical implications of this phenomenon for liberalism, see Phillip Cole, *Philosophies of Exclusion: Liberal Political Theory and Immigration* (Edinburgh: Edinburgh University Press, 2000).

6. Future forecasts vary from 25 million to 1 billion environmental migrants by 2050, moving either within their countries or across borders, on a permanent or temporary basis, with 200 million being the most widely cited estimate. This figure equals the current estimate of international migrants worldwide, according to the International Organization for Migration, *"IOM Outlook on Migration, Environment and Climate Change,"*(IOM, 2014).
7. United Nations, "World Urbanization Prospects," 2014 Revision, https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Highlights.pdf.
8. World Bank, World Development Indicators 2005: Section 3 Environment, Table 3.11, http://documents.worldbank.org/curated/en/947951468140975423/pdf/343970PAPER0WDI0200501OFFICIAL0USE0ONLY1.pdf.
9. International tourist arrivals exceeded 1 billion annual tourists globally for the first time in history in 2012. World Tourism Organization (UNWTO), *World Tourism Barometer* 11.1 (2013), https://www.e-unwto.org/toc/wtobarometereng/11/1.
10. I use the word "expulsion" here in the same sense in which Saskia Sassen uses it to indicate a general dispossession or deprivation of social status. See Saskia Sassen, *Expulsions: Brutality and Complexity in the Global Economy* (Cambridge, MA: Belknap Press of Harvard University Press, 2014), 1–2. Many scholars have noted a similar trend. For an excellent review of the "mobilities" literature on migration, see Alison Blunt, "Cultural Geographies of Migration: Mobility, Transnationality and Diaspora," *Progress in Human Geography* 31 (2007): 684–694.
11. Tim Cresswell, *On the Move: Mobility in the Modern Western World* (Hoboken, NJ: Taylor and Francis, 2012); Mike Featherstone, N. J. Thrift, and John Urry, eds., *Automobilities* (London: SAGE, 2005); Peter Adey, *Mobility* (London: Routledge, 2010); Peter Merriman, *Mobility, Space, and Culture* (London: Routledge, 2013); Mimi Sheller and John Urry, "The New Mobilities Paradigm," *Environment and Planning A* 38.2 (2006): 207–226.
12. For a full-length treatment of such a theory, see Thomas Nail, *The Figure of the Migrant* (Stanford, CA: Stanford University Press, 2015); Thomas Nail, *Theory of the Border* (Oxford: Oxford University Press, 2016).
13. Prior to 1929, most physicists, including Albert Einstein, believed that the universe was contained by an immobile spatiotemporal sphere. However, in 1929 Edwin Hubble produced experimental evidence that showed that the universe was expanding in every direction. By 1998 further evidence showed that the universe was expanding at an *accelerating rate*.
14. Lee Smolin, *The Trouble with Physics: The Rise of String Theory, the Fall of a Science, and What Comes Next* (Boston: Houghton Mifflin, 2006), 151: "From Aristotle up until that point, the universe had always been thought to be static. It might have been created by God, but if so, it hadn't changed since. Einstein was the most creative and successful theoretical physicist of the preceding two centuries, but even he could not imagine the universe as anything but eternal and immutable. We are tempted to say that if Einstein had been a real genius, he might have believed his theory more than his prejudice and predicted the expansion of the universe. But a more productive lesson is just how hard it is for even the most adventurous thinkers to give up beliefs that have been held for millennia."
15. Ilya Prigogine, *From Being to Becoming* (San Francisco: Freeman, 1980).
16. See Smolin, *The Trouble with Physics* (2006).
17. See Sean Carroll, *The Big Picture* (New York: Dutton, 2016), for an accessible review of the state of contemporary physics. See Smolin, *The Trouble with Physics* (2006), for a more detailed review of the literature on string theory and loop quantum gravity. See also Carlo Rovelli, *Reality Is Not What It Seems: The Journey to Quantum Gravity*, translated by Simon Carnell and Erica Segre (New York: Riverhead Books, 2017); Carlo Rovelli, *Seven Brief Lessons on Physics* (London: Penguin, 2016).
18. Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007).

19. For a full-length treatment of this theory see Thomas Nail, *Theory of the Object* (manuscript in process).
20. Today, 77% of developed countries and 40% of the entire world use the Internet. It has become the single-largest mechanism for the production, mobilization, and consumption of sensory media. See the International Telecommunication Union's Statistics page, at http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
21. Luca Turin, *The Secret of Scent: Adventures in Perfume and the Science of Smell* (New York: Harper Perennial, 2007).
22. See Mark Hansen, *New Philosophy for New Media* (Cambridge, MA: MIT Press, 2004) for an excellent literature review of this growing field of study. See also Mark B. N. Hansen, *Bodies in Code: Interfaces with Digital Media* (London: Routledge, 2006); Erin Manning, *Relationscapes: Movement, Art, Philosophy* (Cambridge, MA: MIT Press, 2012); Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2007); Ossi Naukkarinen, "Aesthetics and Mobility: A Short Introduction into a Moving Field," *Contemporary Aesthetics* (2005), http://www.contempaesthetics.org/newvolume/pages/article.php?articleID=350Politics; Simon O'Sullivan, "The Aesthetics of Affect: Thinking Art beyond Representation," *Angelaki* 6.3 (2001): 125–135; Melissa Gregg and Gregory J. Seigworth, eds., *The Affect Theory Reader* (Durham, NC: Duke University Press, 2010).
23. For a full-length treatment of such an aesthetic framework, see Thomas Nail, *Theory of the Image* (forthcoming with Oxford University Press).
24. Obviously, they do so most often as "bourgeois migrant workers" (BMWs). We should therefore not conflate them with other less privileged figures of the migrant. For a full qualification of this point, see Nail, *Figure of the Migrant*.
25. For a number of reasons, including economic, political, gendered, racial, and historical reasons, the analysis of which has shaped much of postwar and contemporary European philosophy. This is discussed in greater detail in the companion volumes to this book.
26. See Chapters 1 and 2 for a full elaboration of this point.
27. Karen Barad describes this process as an "intra-action" or mutual constitution in *Meeting the Universe Halfway*.
28. See John Phillips, "The End of Ontology and the Future of Media Theory," *Media Theory* 1.1 (2017): 122–136, http://mediatheoryjournal.org/john-w-p-phillips-the-end-of-ontology-and-the-future-of-media-theory/; Friedrich Kittler, "Towards an Ontology of the Media," *Theory, Culture & Society* 26.2–3 (2009): 23–31; Jussi Parikka, *What Is Media Archaeology* (Cambridge: Polity Press, 2015); Michel Serres, *Thumbelina: The Culture and Technology of Millennials*, translated by Daniel W. Smith (London: Rowman & Littlefield, 2016).
29. The attention to the material conditions of philosophy has been a growing tendency in much postwar Continental philosophy. For a genealogy of this trend, see Kittler, "Towards an Ontology of the Media."
30. Mobilities theorists have argued for a perspective that takes movement and mobility, rather than static structures, sedentarism, or territorial borders, as the central fact of modern and postmodern life. See Cresswell, *On the Move*, 25–55; Sheller and Urry, "The New Mobilities Paradigm," 208.
31. Cole, *Philosophies of Exclusion*; Bauman, *Globalization*; Papastergiadis, *The Turbulence of Migration*; Giorgio Agamben, *Means without Ends* (Minneapolis: University of Minnesota Press, 2000).
32. Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brains* (New York: W. W. Norton, 2011).
33. See Rovelli, *Reality Is Not What It Seems*.
34. For an excellent literature review of the mobilities paradigm across a number of disciplines, see Sheller and Urry, "The New Mobilities Paradigm."
35. Marc Augé, *Non-places: Introduction to an Anthropology of Supermodernity* (London: Verso, 1995); Manuel Castells, *The Rise of the Network Society*, 2nd ed. (Oxford: Blackwell,

2000); Anthony Giddens, *The Consequences of Modernity* (Cambridge: Polity Press, 1990); David Harvey, *The Condition of Postmodernity* (Oxford: Blackwell, 1989); Frederic Jameson, *Postmodernism, or, the Cultural Logic of Late Capitalism* (London: Verso, 1991); cf. N. Thrift, "A Hyperactive World," in *Geographies of Global Change: Remapping the World in the Late Twentieth Century*, edited by R. J. Johnston, Peter J. Taylor, and Michael Watts (Oxford: Blackwell, 1995), 18–35; Peter Merriman, "Driving Places: Marc Augé, Non-places and the Geographies of England's M1 Motorway," *Theory, Culture & Society* 21.4–5 (2004): 145–167; Peter Merriman, "Marc Augé on Space, Place and Non-place," *Irish Journal of French Studies* 9 (2009): 9–29; Hartmut Rosa and William E. Scheuerman, eds., *High-Speed Society: Social Acceleration, Power, and Modernity* (Philadelphia: Pennsylvania University Press, 2009),1–29.

36. To be clear, the age of mobility described here is not defined by or identical to modern capitalism. It is true that capitalism functions by circulation, but it more specifically functions by capturing and temporalizing moving bodies into crystalized quantities of labor-time: value. Time therefore remains of more primary importance to the specificity of the capitalist mode of production. Motion, on the contrary, remains more primary and defining for the migrant whose living movement is the more primary process that gets temporalized and commodified by capital in the first place. Capital is parasitic on migrant labor just as time is parasitic on motion. See Chapter 34 for a full discussion of the relation between time and motion with respect to capitalism.

CHAPTER 1

1. See Chapter 3.
2. See Sheller and Urry, "The New Mobilities Paradigm," for a great literature review and sample of all the places people are using studying movement and mobility.
3. The extension of this framework to other fields and a closer engagement with other empirical studies of motion is already the subject of several other books in this series, which began with *The Figure of the Migrant* and *Theory of the Border* (on politics), and will continue with *Theory of the Image* (on the arts) and *Theory of the Object* (on the sciences). Each of these books is structured almost identically to help the reader see the connections and entanglements between the fields, but each book deals with only one field.
4. Exceptions include at least Lucretius, Marx, and Bergson. I recognize that this is a bold argument, but I believe that I defend it in two ways: first, negatively, by showing over the course of this book how almost all other Western philosophers privilege some feature other than motion, and second, positively, by showing in three separate monographs how Lucretius, Marx, and Bergson are philosophers of motion. For a full literature review of this topic, see Chapter 3.
5. At this point the reader may sense a tension between the *historical* nature of ontology, on the one hand, and the ontology of motion, on the other. In other words, if the historical primacy of motion is revealed only through a historical process, thought of as "temporal," doesn't this mean that motion is by definition not as fundamental as time? This is an understandable objection, but it also assumes what it sets out to show: that history is "fundamentally temporal." From the perspective of motion, however, history is nothing other than the folding and unfolding of matter in motion. Time is simply the descriptive name we give to the motion of matter in process. It is the thesis of this book that the metaphysical idea of time is a conceptual and descriptive practice and not ontologically fundamental. What history "is" is described quite differently in different historical periods and not always defined primarily by time—thus the concept of history is itself historical and not at all obviously or fundamentally temporal—if time itself is fundamentally kinetic. For a full treatment of this issue and a kinetic theory of time, please see Part IV.
6. See Gabriel Rockhill, *Interventions in Contemporary Thought: History, Politics, Aesthetics* (Edinburgh: Edinburgh University Press, 2016), 51–52.

7. See Michel Foucault, *Essential Works of Foucault 1954–1984*, Volume 1, edited by Paul Rabinow (New York: New Press, 1997), 316: "What difference does today introduce with respect to yesterday?" "I shall thus characterize the philosophical ethos appropriate to the critical ontology of ourselves as a historico-practical test of the limits that we may go beyond, and thus as work carried out by ourselves upon ourselves as free beings."
8. See Levi Bryant, *Onto-cartography: An Ontology of Machines and Media* (Edinburgh: Edinburgh University Press, 2014).
9. For more on methodology, see Book I, Part I.
10. Karl Marx, *The Early Writings* (New York: Penguin, 1992), 423.

CHAPTER 2

1. See Part IV on the philosophy of time.
2. See Part IV, Sections I and II, for a more developed critique of subjectivism and phenomenology.
3. Although the present inquiry is limited to the history of ontological practice, a future study will be dedicated to the preanthropic patterns of natural motion. Book I, Part II does, however, provide a brief kinetic analysis of a nonanthropic (plant) event.
4. François Laruelle's project remains fundamentally negative, since it claims to be providing a metaphilosophy, which is not itself philosophical—"a view from no where." He completely ignores the material, historical, and social conditions under which his own nonphilosophy functions.
5. Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (Toronto: University of Toronto Press, 1962).
6. What Bernard Stiegler calls "originary technicity." See Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus* (Stanford, CA: Stanford University Press, 1998).
7. Henry Liddell, Eric A. Barber, Robert Scott, Henry S. Jones, and Roderick McKenzie, *A Greek-English Lexicon* (Oxford: Clarendon Press, 1940).
8. Graphic marks are ontologically arbitrary but historically synchronous.
9. Graphic signs also include aural signs, since sounds move and mark the hearing body.
10. These four broad areas (bodies, images, objects, and signs) account for most if not all domains of philosophical inquiry and are not limited to humans alone.
11. The reader will likely notice that the only major literature review of the book occurs in Chapter 3, while the rest of the book keeps its secondary literature mostly restricted to the endnotes. Although I do not provide literature review chapters for every topic covered in the book, I have quoted a significant amount of primary textual materials to support my kinetic interpretations, often quoted in their primary language and with my own translations. I also cite extensively from secondary sources. If readers wish to follow up on the debates in the secondary scholarship or are curious to see my influences, the notes provide a good list of the major primary and secondary sources to follow up with. All the examples given in Part II of Book I are treated at length elsewhere, although some of these sources are not yet published.
12. The usage of this framework to develop an analysis of the social, aesthetic, and scientific domains is developed in a series of companion volumes to this book. The mixture of all these domains is the work of future case studies, which will require a hybrid analysis of the social motions, affects, and objects in each of the cases. The ontology of motion is not a predictive, normative, or reductionist theory. It is purely descriptive and analytic across multiple domains.
13. Karl Marx, *Capital*, Volume 1, translated by Ben Fowkes (Harmondsworth, UK: Penguin, 1976), 102.
14. Although there is a succession of dominant kinographic regimes, there is no ontological development or necessary evolutionary pattern to their emergence, only different historical distributions and combinations. Today, there may be a high degree of hybridity of these regimes compared to prehistoric societies, but this does not mean that there will be any ontological necessity of increasing complexity in the future. It only means that "so far" there has been an increasing complexity and hybridity.

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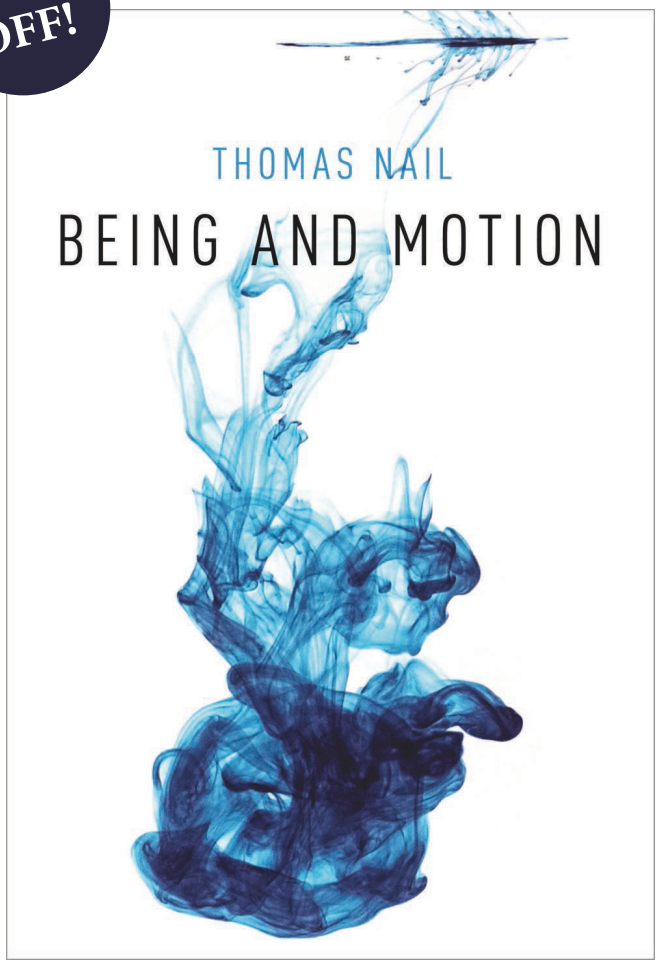

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