CONSTRUCTING CAUSE IN INTERNATIONAL RELATIONS

RICHARD NED LEBOW



CAMBRIDGE

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Cause is a problematic concept in social science, as in all fields of knowledge. We organize information in terms of cause and effect to impose order on the world, but this can impede a more sophisticated understanding. In his latest book, Richard Ned Lebow reviews understandings of cause in physics and philosophy and concludes that no formulation is logically defensible and universal in its coverage. This is because cause is not a feature of the world, but a cognitive shorthand we use to make sense of it. In practice, causal inference is always rhetorical and must accordingly be judged on grounds of practicality. Lebow offers a new approach – "inefficient causation" – that is constructivist in its emphasis on the reasons people have for acting as they do, but turns to other approaches to understand the aggregation of their behavior. This novel approach builds on general understandings and idiosyncratic features of context.

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To Steve, a most wonderful cousin/brother for 72 years
and Gail, an equally wonderful cousin/sister-in-law,
coming up on 42 years

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Acknowledgments

I grappled with the question of cause only tangentially in *A Cultural Theory of International Relations* (2008) and *Forbidden Fruit: Counterfactuals and International Relations* (2012). In both books, and arguably in *Why Nations Fight: The Past and Future of War*, cause resembles the apocryphal 900-pound gorilla in the room, to whom everyone defers but no one mentions. All three works deploy the concept and make substantive causal inferences but never define or interrogate it. I believe it important to work through the notion of cause and its implications, not only because it is important to my own research but because it is perhaps the most fundamental epistemological question in the social sciences. Is cause the cement of the universe, or, as David Hume concluded, mere human artifice often imposed rather crudely on the world to help us make sense of it and get on with our business? I follow Hume in believing it is the latter, and argue that this is why none of our formulations of cause map neatly on to the physical or social worlds. The open-ended character of the social world, the subjective nature of all our conceptions about it, and the reflexivity of its actors confound the Humean search for "constant conjunctions" and compel us to develop thicker understandings of causation. Each of these formulations encounters insuperable obstacles, confronting us with the following conundrum: we require, or want to use, cause to understand the world, but none of our formulations of it are logically consistent and empirically comprehensive. This book is about how we might respond to this problem in the context of international relations.

I would like to thank the many people who inspired or assisted me in working through my approach to cause. Jens Bartelson, Carol Bohmer, Fritz Kratochwil, Dorothy Noyes, Nick Onuf, Stefano Guzzini, and David Lebow each read chapters or a draft of the manuscript and provided useful comments and criticism. Nick emphasized my need to address the problem of mechanisms, and Stefano generously shared his thoughts on the problem, many of which went into the conclusion

of his edited book on geopolitics (*Return of Geopolitics*). David and Fritz, my toughest critics, pushed me on points where arguments were inadequate, unclear, or, in their opinion, wrong. Heikki Patomäki instructed me in the finer points of critical realism. Dartmouth physicists Jim LaBelle and John Thorstensen read and critiqued my treatment of cause in physics, as did my elder son Eli, a mathematician. Jan Hönig and Andrew Latham did the same with my case study of art and the territorial state. I am indebted to three anonymous reviewers, especially the one who provided thirteen single-spaced pages of comments. Once again, John Haslam, now my editor for five books with Cambridge University Press, offered invaluable advice and support.

I began my research in Vienna, while teaching a mini-course on the philosophy of science at the Diplomatische Akademie. It was the ideal venue as it was once the home of the Vienna Circle, whose members and associates contributed so much to our understanding of cause. Markus Kornprobst, my host, ably carries on their tradition of the free and cordial exchange of ideas. I conducted more research in Hanover, New Hampshire, and London, England. The Dartmouth College library has a wonderful collection of books that can actually be found on the shelves where the catalog says they are filed. I did additional research while Centennial Professor at the London School of Economics and Political Science (LSE).

I did most of the writing in Sweden, where, courtesy of Jens Bartelson, his colleagues, and the National Research Council, I spent the year at the University of Lund as the Olof Palme Professor. The position came with salary, accommodation, interesting colleagues, and no teaching responsibilities. I am doubly grateful to Jens for his enlightening comments on cause and feedback on evolving conceptions over many drinks and dinners during the long Scandinavian winter. I completed the final draft in Wellington, New Zealand, thus tracing almost in reverse the biographical trajectory of Karl Popper from Vienna to New Zealand to London and the LSE.

Final drafts are never final and I made additional revisions and checked copy and page proofs back in London and Cambridge. Having retired from Dartmouth, I am now professor of international political theory in the War Department of King's College London and Bye-Fellow at Pembroke College, University of Cambridge. I am grateful to all three institutions and my colleagues there for encouragement and support.

Introduction

Cause is a metaphysical doctrine . . . [It] is not of much use in a world like this, in which the same antecedents never again concur, and nothing ever happens twice.

James Clerk Maxwell[1]

Cause is a problematic concept in all fields of knowledge. The reason, as Hume and Maxwell observed, is that cause is not a feature of the world but a human invention. We organize information in terms of cause and effect to impose order on the world and make it more predictable. Our naïve understanding of cause builds on the concepts of succession and continuity, and the assumption that some necessary connection exists between them. This understanding is useful in everyday life, and we may be hardwired to think this way. Like all cognitive shorthands, reliance on cause can stand in the way of more sophisticated understandings. Recognizing this limitation, some physicists have given up the search for cause in the belief that it is unnecessary and even counterproductive.

Most philosophers and ordinary people feel there is something missing in accounts of the natural or social worlds that are not causal. In his famous dissent from the Copenhagen interpretation of quantum mechanics, Albert Einstein refused to accept that the universe was indeterminate at its most fundamental level. "God does not play dice," he insisted, and remained hopeful throughout his life that physics might somehow develop a deeper, deterministic, and causal theory. Other physicists and philosophers have followed Bertrand Russell in rejecting cause as something that stands in the way of science. Alternatively, they have tried to devise formulations of it more consistent with the empirical findings of the sciences. These formulations abound, and they

[1] Maxwell, "Progress of Physical Science."

all are deeply problematic and recognized as such by most philosophers of science.

Cause is inseparable from ontology and epistemology. We cannot analyze it independently of our conceptions about the proper units of analysis and the nature and conditions of knowledge. As there are different and competing understandings of ontology and epistemology, it is difficult, some might say, unwarranted, even unfair, to evaluate formulations of cause across them. For this reason, I initially do so within the ontological or epistemological frameworks of their advocates. This allows me to assess their logical robustness and comprehensiveness. These assessments in turn provide grounds for interrogating the ontological or epistemological assumptions on which they rest.

Ontological and epistemological commitments generally influence, if not determine, a scholar's approach to cause. The arrows of influence nevertheless point in both directions. New understandings of cause, or greater appreciation of the conceptual and empirical problems associated with an existing understanding, can encourage a rethinking of one's ontological and epistemological commitments. This is one of my goals, because I believe that social science has been dominated by epistemologically indefensible understandings of cause.

Following Hume, positivists attempt to finesse cause by searching for associations that can be used to make predictions. Others aspire to make law-like statements to which empirical regularities can be subsumed. Both strategies are deeply problematic. Regularities are not causes. Nor can they be used to predict if they are irregular, context dependent and temporally bounded, as they almost invariably are in the social world. There are no social laws, and they could not be considered causes unless they incorporate mechanisms or processes responsible for the regularities they describe. A more fundamental objection to both approaches is that they rest on an inappropriate ontology. They falsely assume the physical independence of the "things" described as causes and effects, what Hume called "distinct existences." However, as Maxwell argued, all objects and events in the social world are the products of socially constructed categories, as are any hypothesized connections among them. A half-century before Hume, Giambattista Vico observed that conceptual categories change in response to changes in practice and the questions that engage us. As both evolve in

path-dependent ways, he insisted, the study of society is as much historical as analytical.[2]

According to Max Weber: "as soon as we attempt to reflect about the way in which life confronts us in immediate concrete situations, it presents an infinite multiplicity of successively and coexistently emerging and disappearing events." The social world is not naturally divided into categories whose members can be considered comparable in all meaningful ways. It is neither lawful nor rational; it is rendered this way – in appearance only – by our own transcendental faculties.[3] I follow Weber in believing that conceptualization and causal inference in the social world are pure reification. They may be useful but do not ultimately capture anything that might be described as real.

Chapter 1 analyzes the concept of causation. Toward this end, I turn to physics and philosophy of science. I am not drawn to physics as a model, but to its use of diverse understandings of cause to make an important analytical point. Physics has no general approach to causation, but field and subfield-specific ones that scientists find to varying degrees useful in their research. Social science should follow and develop understandings that seem useful and appropriate to researchers in diverse domains.

Philosophy is the discipline in which the concept of cause has been studied most intensively. I describe some of the principal cleavages and controversies in this literature. They include the nature of causation, the extent to which it is a feature of the world, and different ways of conceiving cause. Debates about these questions reveal deep divisions, but also a consensus that all formulations of cause are problematic because of logical problems and inability to cover all possible causal situations. Philosophical debates address for the most part the physical world. In the social world, where constant conjunctions are never found, and where covering laws are inapplicable, prediction is far more problematic. Paradoxically, the concept of cause is more important in this circumstance. We must turn to "thicker" conceptions of cause, to causal mechanisms and processes, to try to make sense of the imperfect correlations we find and the social world more generally. This is a more demanding task.

[2] Vico, *New Science*. [3] Weber, *Methodology of the Social Sciences*, p. 78.

The major difference between the physical and social worlds is agency. Human actors and their collectivities do not merely convey forces like electrons, or respond to them like billiard balls; they have goals of their own and idiosyncratic understandings of context. Rational choice and other rationalist approaches take individual actors as their unit, but effectively deprive them of meaningful agency by analyzing their behavior as responses to external constraints and opportunities. People see the world differently, and their understandings are not independent of their desires and fears. People are reflective and change their goals and their modus operandi in the light of experience. To explain most political outcomes we must break out the analytical problem out into two steps: the behavior of actors, and its consequences. The task of the former is to reconstruct the world through the eyes of actors to understand their choices and behavior. The latter step is an aggregation problem as social outcomes are usually the product of interactions of multiple agents.

Chapter 2 examines the applicability of diverse formulations of cause to international relations. Most are based on ontological and epistemological assumptions that seem inappropriate. The search for regularities, and the Humean conception of constant conjunction on which it rests, are embedded in Cartesian dualism and its understanding of mental activities as the product of reason.[4] In practice, every imagined relationship between an "X" and "Y" is embedded in a broader social context from which it cannot meaningfully be extracted because these contexts determine the extent to which "Y" varies with "X." Associations are imperfect at best; they tell us what *may* happen, not what will happen. In international relations, they cannot even provide base rates as the conditions from which so-called base rates are derived are constantly evolving. So too are the characteristics of whatever we describe as dependent and independent variables.

I employ context in two different ways in this book. The first has to do with the outcomes of interest to us. They are all context dependent, even those in which agency is not decisive. Important macro developments like the replacement of hunter-gathers by settled agricultural societies depended on access to water and arable land and did not develop where these features were absent. Jared Diamond argues that European and Asian societies had a significant economic advantage

[4] Jackson, *Conduct of Inquiry in International Relations*, pp. 24–40.

over their American counterparts because they could domesticate more species of animals and had temperate zones that were connected because the Eurasian land mass ran east–west rather than north–south.[5] Ken Pomeranz suggests that one of the factors that facilitated industrialization in Europe and retarded it in China was the collocation of iron and coal in the former and waterways that facilitated the transport of raw materials or manufactured goods to urban centers of consumption.[6] All three outcomes were dependent on specific physical contexts. Pomeranz also recognizes a number of important social conditions, and, while the product of human behavior, their consequences cannot be attributed to the agency of individuals.

Medium- and shorter-term developments are more influenced by social than physical features of the environment. Subjective understandings of context, as well as agency and confluence, are critical in shaping outcomes and are, by definition, outside of any theory of international relations. They are one reason why associations are imperfect and short-lived. It follows that social theories can do little more than structure problems for us. They are most useful as starting points for narrative explanations or forecasts. Narratives have the potential to combine and benefit from general and local knowledge.

My second meaning of context concerns our personal involvement in any research question. We are never independent of what we investigate because there is no reality out there waiting for us to discover or describe through increasingly better approximations. The social world is the product of our conceptions as well as our practices. Again taking my cue from Weber, I contend that our approach to knowledge and the questions we ask are not independent of our cultural setting. Our analytical interventions in turn influence this setting. Good scholarship requires awareness and sensitivity to these interactions and recognition of the subjective nature of our research and findings independent of the robustness of our methods. It follows that there are no "right" answers, only useful ones, and perhaps multiple useful ones, given the diverse interests of actors.

Building on this double meaning of context, Chapters 2 and 3 develop an approach that I call "inefficient causation." It rests on the premise that many, if not most, international events of interest are best described as instances of what philosophers call singular causation. We

[5] Diamond, *Guns, Germs, and Steel.* [6] Pomeranz, *Great Divergence.*

can construct causal narratives about these outcomes, but they cannot be explained or predicted by reference to prior generalizations or narratives. Nor do they allow us to predict future events. Singular causation understands cause as the glue that holds a story together; it is something akin to a plot line in a novel. Such an understanding resonates with another side of Hume, who distinguished literature and history on the one hand from chronicles on the other. The former are made meaningful by emplotment, while a chronicle is a mere recital of past events. Hume regarded history, once freed from its Christian and mythical roots, as the proper paradigm of human understanding because its narratives connect our consciousness with what lies outside of it.[7] In this formulation, cause makes sense of the social world in a manner consistent with evidence in a way that has some social value beyond its internal structure. In speaking of cause, as I do throughout the book, I intend it in this sense.

Singular causation is, I believe, the most appropriate approach to understanding an open-ended, non-linear, and reflexive political world. As noted, I factor the causal problem into two sequential steps. The first concerns actors and their reasons for behaving. All politics consists of human actions and we want to know why it occurs. We are equally interested in the outcomes to which it leads. Reasons and behavior are best approached from a constructivist perspective, by searching for the reasons why people act as they do. Its consequences are the product of interactions among multiple actors, and not infrequently defy the expectations of those involved. We need a different set of tools to study aggregation; we must identify the mechanisms and processes that transform behavior into outcomes. Mechanisms and processes are also important in the first step of the causal problem because they mediate between cognitive and visual frames of reference and behavior influenced or shaped by them.

There are other similarities between behavior and aggregation. Neither can usually be attributed to single causes. To tease out multiple causes and relationships among them we need to employ so-called factual and counterfactual arguments. They help us identify pathways that might qualify as causal and construct multiple causal narratives,

[7] Hume, *Inquiry Concerning Human Understanding*, section iii, "Of the Association of Ideas," and "On the Study of History"; Livingston, *Hume's Philosophy of Common Life*.

or what I describe as causal maps. Narratives of this kind allow richer depictions of the world and more informed judgments about possible underlying "causes," the level at which they are found, and their key enabling conditions. The mapping of many outcomes and their possible causes will ultimately provide us with a more useful understanding of the world than the search for regularities, covering laws or the properties philosophical realism associates with things. But we must be clear that context is almost always determinate, so causal maps and any generalizations they allow are at best starting points for forecasts, never for predictions.

Chapter 4 offers a case study of inefficient causation. It explores the connections between deep cognitive frames and political goals and the mechanisms that connect them. I argue that the visual revolution of the Renaissance was an underlying cause of the territorial state because it made it possible, even necessary, to imagine this political form. The Renaissance visual revolution was characterized by linear perspective, but also by a concern to represent people as distinct individuals. There was a greater commitment to what we call realism and to life in this world in contrast to the next. The principal mechanism linking developments in the arts to political conceptions was maps, which underwent a radical transformation in design and purpose. At a deeper level, I suggest that visual revolution and territorial state alike might best be understood as expressions of the growing commitment to autonomy. This initially had individuals as its focus, but was extended to political units.

There has been a more recent visual revolution that initially found expression in Riemannian geometry, and later in parallel but independent developments in art and literature. Non-linear perspective – the key feature of this revolution – has nevertheless had relatively little effect on political conceptions and practices. At most, it contributed metaphors like webs, networks, and filaments. The difference in political consequences between the two visual revolutions may be due to the absence of any underlying psychological transformation of identity. The Renaissance and early modern projects of constructing the autonomous individual relied on the new visual frames or provided incentives for their application in diverse spheres of representation.

My case study only addresses the first step of the causal puzzle surrounding the territorial state: its emergence as a political conception and goal. I direct my attention to the problem of cognitive frames with

two goals in mind. The first is to make the case for their causal consequences. In the process, I confront the conundrum that the deepest and most important cognitive frames are generally the most difficult to study and document because they leave the fewest traces. The second is to expand our understanding of cognitive frames. For the most part, constructivists direct their attention to identities, but they are only one kind of cognitive frame or emotional commitment. Visual frames, which I emphasize in my case study, are different from and largely independent of identities, although they interact with them.

My other focus is on mechanisms and processes. They mediate between cognitive frames and political goals and behavior and are critical to aggregation. There are some differences between mechanisms and processes, but how we distinguish between them is generally a function of the task we assign to them. I offer broad definitions of mechanisms and processes to free them from the straitjacket in which positivists and rationalists have attempted to wrap and restrain them. They do this to prevent unobservables from entering the causal picture, but there is no way to avoid engaging mechanisms and processes at the metaphysical level.

Chapter 5 puts my theoretical and empirical arguments into broader perspective. It revisits the three fundamental cleavages among philosophers about cause I describe in Chapter 1. It situates inefficient causation in this debate and defends its ontological and epistemological premises. It goes on to consider the relationship between cause and knowledge. I conclude by offering some thoughts about the extent to which social science should focus on cause, given its conceptual problems and the empirical difficulty of establishing causal connections in the social world.

Before proceeding I want to be more explicit about my ontological and epistemological starting points. I do not consider cause a feature of the world, let along the "cement of the universe," as J. L. Mackie asserts, deploying a phrase of Hume's out of context.[8] Pace Hume, I consider cause a cognitive shorthand. We invoke it to make sense of our physical and social environments, but because it is a purely human construct it neither maps neatly nor effectively on to the world. This is the fundamental reason why philosophers have never been

[8] Mackie, *Cement of the Universe*. The original Hume reads: "they are really *to us* the cement of the universe."

able to devise a formulation that comes close to meeting the requisite logical and empirical tests. Like all cognitive shorthands, that of cause must be assessed in terms of its practical payoffs, and, perhaps, its psychological utility. The logical tests of philosophers are useful in identifying shortcomings of our formulations, but are in other ways beside the point.

In practice, the demonstration of cause in the social world is all but impossible. Outside of the laboratory, where closed and controlled systems can sometimes be created, the best we can do is to make rhetorical claims about cause. For the same reasons, assertions of cause are correspondingly difficult to disprove. This situation makes it all the more imperative for us to be as explicit as possible about our epistemological assumptions, methods, and procedures for making inferences.

There is much to be gained by recognizing the imperfect nature of our conceptions of cause and the near impossibility of ever establishing cause empirically. It shifts the burden of "proof" away from the application of any particular method or appeal to any procedure of validation to more cautious claims that positing a causal relationship will prove useful to us in the world. Wider recognition of the impossibility of demonstrating cause should make producers and consumers of scholarship more aware of the extent to which the seeming persuasiveness of any causal claims rests with their packaging. This in turn could make us more suspicious of all assertions of cause and more sophisticated in our responses to them.

I employ two different kinds of benchmarks to assess causal claims. The first is the criteria used by philosophers to assess causal frameworks: logical consistency and empirical adequacy. I argue that all formulations of cause fail one or both tests, and that this is inevitable as cause is not a feature of the world but a concept we impose on it. Some formulations of cause show a better fit with international relations than others, but all confront insurmountable challenges.

My second benchmark is empirical. Our choice of ontology and epistemology dictate the kinds of theories and methods to which we turn. These theories may or may not tell us something useful about the world. It is our substantive theories – not our formulations of cause – that we test, or at least evaluate, against empirical evidence. The two benchmarks are distinct but far from independent, given the links between ontology and epistemology on the one hand and theories and methods on the other. Success or failure of our empirical

projects should heighten or diminish our confidence in our ontology and epistemology. I accordingly support the use of external as well as internal criteria as benchmarks for assessing causal frameworks. Such an approach is rooted in nineteenth-century American pragmatism. Its founders, Charles Sanders Peirce and William James, were driven to formulate it in response to their recognition that cause could never be logically or empirically established.[9] Cause, along with all truth claims, is nothing more than an idea. In the words of James, something "*becomes* true, is *made* true by events. Its verity is in fact an event, a process: the process namely of is verifying itself."[10] Truth for James was nothing more or less than an expedient way of thinking, analogous to the concept of right, which he thought the only expedient way of behaving.[11] Both kinds of truths should be envisaged as "rules for action" and end products of thinking.[12] We nevertheless believe in cause with good reason because experience teaches us its utility.[13]

The problematic nature of cause has pushed social scientists in different directions. Initially, it encouraged approaches to knowledge that finesse cause. This was, of course, an important motive behind Hume's move to constant conjunction, an epistemology that still undergirds most social science research. Rationalist theories and many kinds of computer simulation go a step further and more or less dispense with cause. Dissatisfaction with "thin" conceptions of cause of the kind represented by constant conjunction and other theories of association, has also been a incentive to develop "thicker" formulations of cause that emphasize the processes and mechanisms responsible for outcomes. My conception of "inefficient cause" is in this tradition, although based on different epistemology than other formulations that invoke mechanisms and processes.

David Hume sought to devise an understanding of cause so thin that it all but did away with it. Constant conjunction appealed to him because it relied on observables, in contrast to earlier formulations of cause that rested on metaphysical foundations. The difficulty, previously noted, is that there are no constant conjunctions in the social world, only imperfect ones, so it becomes necessary to think about mechanisms and processes that might enable "causes" to have their

[9] Menand, *Metaphysical Club*, ch. 9.
[10] James, *Pragmatism*, p. 97, italics in original.
[11] Ibid., p. 106. [12] Ibid., p. 259.
[13] James, *Principles of Psychology*, vol. II, p. 1264 and *Pragmatism*, pp. 93–4.

effects and to tell us something about the conditions in which this is most likely to happen. Mechanisms and processes, excluding human-designed ones, like electoral systems, are generally not observable. So the turn to mechanisms and processes brings us back to the metaphysics from which Hume and many of his early modern predecessors and Enlightenment contemporaries sought so desperately to escape. It is ironic that the search for cause has come full circle, although our return to metaphysics is very different from the formulations of Aristotle and his medieval followers.

1 *The quest for cause*

Our idea . . . of necessity and causation arises entirely from the uniformity visible in the operations of nature, where similar objects are constantly conjoined together, and the mind is determined by custom to infer the one from the appearance of the other.

David Hume[1]

Social science is the ultimate Enlightenment project. Through reason it aspires to order and understand the social world, and implicitly to reorder it on the basis of this knowledge. The Enlightenment and social science alike were inspired in part by breakthroughs made by scientists in early modern Europe in understanding the physical world. The work of Galileo, Torricelli, and Newton generated the expectation that the physical world might be understood in terms of law-like statements, all of which could be unified in a larger theoretical edifice. Social science – also influenced by socio-political reflection and pre-Darwinist biology – modeled itself on this understanding of physics, which is still reflected in positivism and its various guises.[2]

The physical sciences have moved away from what was at the outset a religiously inspired vision of the world as a machine set into motion by god its architect. Quantum mechanics and the Copenhagen Interpretation it prompted have brought most physicists around to a view of the world as indeterminate and unpredictable at its core, although subject

[1] Hume, *Enquiry Concerning Human Understanding*, VIII.1.5.

[2] Social science is also the product of eighteenth- and nineteenth-century socio-political reflection that developed independently of the natural sciences. The writings of Vico, Rousseau, and Saint-Simon were especially notable in this regard. Pre-Darwinist biology, and its organicism, vitalism, and proto-functionalism, also contributed to social science. These diverse strands of development conceived of cause in different ways and encouraged diverse perspectives in social science. A standard narrative developed that downplays diversity and emphasizes the scientific component, especially classical mechanics.

to robust, often probabilistic generalizations, at the macro level.[3] Investigation of non-linear processes – beginning with Poincaré's solution to the three-body problem – also encouraged greater awareness of contingency, confluence, and the limits of prediction.[4] At least some philosophers of science have challenged the feasibility of the long-standing goal of physics to produce equations of universal validity that explain the universe. Nancy Cartwright argues for a "dappled" view of the world in which different laws contribute to describing events but cannot be assimilated to an overarching, hierarchical framework.[5]

In the 1920s, the Vienna Circle conceived of physics as an enterprise in which truth claims could be assessed by logically derived procedures. King, Keohane, and Verba's, *Designing Social Inquiry* – perhaps the most widely used methods text in US graduate political science courses – embraces this epistemology even though it has long been repudiated by its principal authors and other philosophers of science.[6] Typical of behavioral social science, King, Keohane, and Verba are also attracted to a version of Carl Hempel's deductive–nomological model, a response to the inadequacy of constant conjunction. King, Keohane, and Verba are careful to distinguish association from cause, but their unremitting focus on correlation perhaps unwittingly encourages the widespread practice among quantitative researchers of "throwing caution to the wind" when they make policy recommendations that assume causal connections.[7]

Classical mechanics remains the model of science for many social scientists.[8] The social world nevertheless differs in fundamental ways from its physical and biological counterparts. There is nevertheless still something important to be learned from physics. Its fields and even subfields have developed different understandings of cause and its utility. Philosophers of science have devoted much thought to the problem

[3] By indeterminate physicists I mean that one cannot predict the future state of the system.
[4] Gleick, *Chaos*; Nicholas and Prigogine, *Exploring Complexity*; Bak and Chen, "Self-Organized Criticality"; Byrne, *Complexity and the Social Sciences*; Urry, *Global Complexity*; Jervis, *System Effects*.
[5] Cartwright, *How the Laws of Physics Lie* and *Dappled World*.
[6] King, Keohane, and Verba's, *Designing Social Inquiry*, ch. 1.
[7] Kinkaid, "Mechanisms, Causal Modeling, and the Limitations of Traditional Multiple Regression."
[8] Salmon, "Four Decades of Scientific Explanation."

of cause. Here, too, there is no consensus, as numerous frameworks compete with one another, all of them recognizably problematic.

In the tradition of Cartesian dualism, analytical philosophers in the 1950s made a sharp distinction between mental life and physical causes. The latter were seen as independent of the former, and many philosophers believed that mental life might be explained by physical, i.e., external causes. Given this orientation, there was no interest in looking at unobservables, like reasons, motives, or thoughts, because they were not considered necessary to account for behavior. Analytical philosophy provided intellectual support for the behavioral revolution in psychology, economics, and political science.

Significantly influenced by the linguistic turn, contemporary analytical philosophy has come to understand reasons, and mental life more generally, as important. The question is no longer their relevance, but how to study the connections between emotion and reflection on the one hand and behavior on the other. This orientation has gradually penetrated the social sciences. Economics has embraced experimentation as a means of exploring this relationship, and psychology, which formerly ignored emotions, or sought to account for them cognitively, has begun to study emotions in their own right. Political science and international relations are moving slowly in the same direction. Recent work, drawing on neuroscience or Greek philosophy, stresses the positive as well as negative role of emotions and properly directs our attention to the conditions associated with these divergent outcomes.[9]

Studies of war nicely illustrate this evolution. Traditional historians looked for underlying reasons of wars, but most gave equal emphasis to agents and their motives. In the postwar era, behavioral approaches became dominant in international relations and led to a fixation on finding regularities or so-called structural determinants of war (e.g. imbalance of power, uneven economic development, absence of institutions able to coordinate). The former approach undergirds the correlates-of-war project, and the latter, balance of power, power transition, and liberal institutionalism. Rationalist approaches to war frame the problem in terms of decisions made by leaders, but deny

[9] Clore, "Cognitive Phenomenology" and Clore et al., "Affective Feelings as Feedback"; Damasio, *Descartes' Error*; Gray, *Psychology of Fear and Stress*; Marcus, Neuman, and Mackuen, *Affective Intelligence and Political Judgment*; McDermott, "Feeling of Rationality"; see Lebow, "Achilles, Neuroscience and International Relations," for a review.

meaningful agency by explaining those decisions in terms of external constraints and opportunities. My *Why Nations Fight* represents a sharp break with this tradition, as it foregrounds motives as causes in its attempt to explain the origins of war and its frequency.[10]

Constructivists reject all forms of mechanical causation. They insist that behavior cannot be reduced to material causes; it is social all the way down. "Truth" is not a property of the world, but a product of theoretically informed and evaluated propositions about it. It follows that we never evaluate propositions against the so-called real world, but against "facts" that are at least in part a creation of our theories. Once we accept that facts and concepts alike are subjective creations, we are forced back on an understanding of the world that shares much in common with the nineteenth-century concept of *Geisteswissenschaft*.[11] The study of international relations moves closer to cultural studies. This is an underlying assumption of my *Cultural Theory of International Relations*, which maintains that different value systems generate distinct logics of cooperation, conflict, and risk taking, and also different kinds of hierarchies and conceptions of justice.[12] These value systems tap universal human motives, but their expression and relative importance are mediated by culture and the understandings people have of their cultures.

The behavioral revolution was based on the premise that the social world resembles the physical world and that knowledge in both consists of regularities and laws that describe them. If the social world is fundamentally different, the search for regularities may be of limited relevance. And in the social world there are few, if any, constant conjunctions. Even such seeming robust regularities like supply and demand and price and demand depend on specific underlying conditions. Increases in demand do not always prompt efforts to provide greater supplies, and the relationship between price and demand is not always inversely related. High-end retailers and restaurateurs have long understood that high prices can stimulate demand.

Hume's formulation of causation, on which regularity theories are based, assumes a world of loose and separate existences in which we

[10] Lebow, *Why Nations Fight*.

[11] Schutz, "Social World and the Theory of Social Action" and "Common-Sense and Scientific Interpretation"; see Searle, *Construction of Social Reality*, on the social construction of concepts and facts.

[12] Lebow, *Cultural Theory of International Relations*.

look for constant conjunctions. It is embedded in Cartesian dualism and its understanding of mental activities as the product of reason.[13] Social regularities are imperfect because the world is not composed of separate and independent things as Hume supposes. It more closely resembles a web, whose seemingly distinct features are the products of the categories we impose. Any kind of association tells us what *may* happen, not what will happen. At best, associations are starting points for constructing narratives into the past and the future.

Social regularities are generally short-lived because the context that sustains them is always evolving; sooner or later it changes in a way that undermines them. This phenomenon is also attributable to reflexivity, which is another important way in which the social world differs from its physical counterpart. As Max Weber observed, the half-life of any regularity is short because people take it into account once they become aware of it. While a few regularities may be strengthened by awareness of them, most arguably are not, making social science based on Humean assumptions a self-defeating enterprise – unless one looks at the same time for the features of context that sustain any observable regularities.[14]

For Hume, imagination is responsible for abstract ideas, of which causation is one. The mind receives, organizes, and stores sensory input. Our impressions do not constitute knowledge about the world, but help us cope with it.[15] Hume was a close reader of Newton and subscribed to his belief that rational human inquiry promotes a progressive harmonization and simplification of our understandings of the world, which we treat as "laws of nature."[16] Hume follows Newton in relying on the experimental method, but experience, responsible for the inferences, limits us to observables. We can only guess at underlying causes.

Despite recent and unpersuasive attempts to read Hume as a realist, the great empiricist was clear that causation was not a feature of the world.[17] His approach to it was empirical and reflected what

[13] Jackson, *Conduct of Inquiry in International Relations*, pp. 24–40.
[14] Lebow, *Forbidden Fruit*, ch. 1 elaborates on this claim.
[15] Hume, *Enquiry Concerning Human Understanding*, IV.II.14–15, V.1.3–5.
[16] Newton, *Principia*, p. 92.
[17] See Strawson, *Secret Connexion*, for Hume as a realist, and Richman, "Debating the New Hume," for a refutation. See Read and Richman, *New Hume Debate*, for a fuller discussion.

he observed of human practice; people intuitively made causal connections when they observed constant conjunctures and used them to make predictions. Causation for Hume is one of a number of conceptual tools that enable human society.[18]

Stephen Turner has described the desire to make inferences – Humean and other kinds – as "a metaphysical itch that seems not to want to go away."[19] This tendency may be "hardwired" into us, and, as Hume realized, an effective tool for coping with the world. In recent decades, psychologists have identified a number of cognitive biases that appear to serve similar functions; they help people make rapid decisions about what information to pay attention to and how to interpret it. Research demonstrates that these biases are ubiquitous and sharply at odds with rational procedures for estimating probabilities or making attributions.[20] Psychologists distinguish the former from the latter, and political scientists should do the same when thinking about causation. Humean association captures folk practice. It is an unwarranted leap of faith to assume it appropriate to scientific inquiry.

How then should we think about the concept of cause and its relevance to our scholarly enterprise? In the remainder of this chapter, I review different understandings of cause. I have two intellectual starting points: physics and philosophy of science. I do not model my approach on physics, but turn to this field to make an important conceptual point. If physics has no general approach to causation, but rather field and subfield specific ones that have emerged in the course of research, there is no reason to assume that any particular formulation of cause should have precedence in the social sciences, including international relations. Rather, we should follow physics by developing domain-specific understandings that seem useful and appropriate.

My second starting point is philosophy of science, where the nature of cause and its relevance to the physical and social worlds have been most intensively studied. I draw on relevant literature to demonstrate the lack of consensus among philosophers and their recognition of the logical problems and empirical limitations of any understanding of cause. I read this literature to suggest that those of us who engage the social world must nevertheless still invoke some concept of cause to

[18] Hume, *Enquiry Concerning Human Understanding*, III.2 and VIII.1.5.
[19] Turner, *Social Theory of Practices*, p. 9.
[20] Kahneman, Slovic, and Tversky, *Judgment under Uncertainty*.

make sense of it. Here, too, however, dissensus suggests that we are free to work with whatever conception we consider germane to our purposes.

Physics and cause

Even before the development of quantum mechanics, some physicists questioned the long-held belief in a deterministic universe, on which most understandings of cause rested. In 1909, Franz Exner suggested that all natural events were governed by chance but gave the false appearance of determinism because of the large number of events involved. In the late nineteenth century, Johannes von Kries and Theodor Fechner adopted a Kantian approach to probability. After World War I, they were followed by von Richard von Mises.[21] Moving away from determinism did not require giving up the concept of cause, but it did demand rethinking it and developing understandings commensurate with more probabilistic approaches to science.

In some fields, most notably quantum mechanics, cause became increasingly problematic. Beginning early in the twentieth century, experimental results made it all but impossible to develop causal accounts of some quantum phenomena. Three problems stand out: some events that might otherwise be considered causal are unconnected by any continuous process; some quantum-level processes appear to have instantaneous effects across large distances, and some quantum effects occur before their putative causes.[22] Physicists acknowledge that conventional understandings of causality are also violated whenever an atom emits a photon or a nucleus decays, because none of these events appear to be triggered by a preceding one. Most troubling of all are events for which causal explanations would require instantaneous, that is, superluminal, communication.[23] In the corner of quantum mechanics where these phenomena are observed, physicists have abandoned the concept of cause.

Many other physicists came to consider the universe indeterminate and the concept of cause irrelevant, even a hindrance, to their project.

[21] Lange, "Causation in Classical Mechanics."
[22] Healey, "Causation in Quantum Mechanics."
[23] Shimony, *Search for a Naturalistic World*, p. 151; Dickson, "Non-Relativistic Quantum Mechanics," pp. 390–1.

The 1920s witnessed a reaction to this development. Hans Reichenbach affirmed his belief in causation in the form of law-like function statements of physics.[24] Moritz Schlick – a leading figure in the Vienna School – asserted that everything that happens in nature is subject to valid laws. He subsequently relaxed this belief to accommodate quantum mechanics and the Heisenberg principle and adopted the position that only utter chaos could be described as non-causal. Schlick became an advocate of the regularity view of causation and came to insist that the sole criterion for lawfulness (*Gesetzmässigkeit*) was prediction. In this hollowed-out Humean understanding, causality is nothing more than a directive "to seek regularity" (*Regelmässigkeit*).[25] More recently, J. L. Mackie praises the regularity approach on the grounds that it "has at least the merit that it involves no mysteries, no occult properties like necessity."[26]

In the 1960s, Richard Feynman famously argued that quantum mechanics compels us to reject causal determinism as a condition of nature or goal of science.[27] More recently, Brian Skyrms evaluated seven theories of causation against the empirical findings of quantum phenomena and found them all wanting.[28] Many philosophers have adopted this position, although some physicists remain committed to determinism.[29] The most renowned affirmation of this kind remains the Einstein, Podolsky, and Rosen paper of 1935, which expresses the hope that one day a deterministic theory would emerge that could integrate quantum mechanics and its seeming indeterminacy.[30]

Statistical mechanics is applied to a diverse range of macroscopic objects and their behavior, including thermal and magnetic phenomena and the structure of matter in its four phases (solid, liquid, gas, and plasma). It is a hodgepodge of approaches and formulations, but central to it are the concepts of equilibrium, irreversibility, entropy, and temperature, and the laws governing them. The seemingly bizarre

[24] Reichenbach, "Kausalproblem in der Physik" and "Principle of Causality and the Possibility of its Empirical Confirmation."
[25] Schlick, "Kausalität in der gegenwärtigen Physik"; Stöltzner, "Logical Empiricists."
[26] Mackie, *Cement of the Universe*, p. 60.
[27] Feynman, *Character of Physical Laws*, p. 147.
[28] Skyrms, "EPR."
[29] Bohm, "A Suggested Interpretation of the Quantum Theory in Terms of 'Hidden' Variables, I and II" and *Causality and Chance in Modern Physics*.
[30] Einstein, Podolsky, and Rosen, "Can Quantum Mechanical Description of Physical Reality Be Considered Complete?"

features of quantum mechanics do not feature in statistical mechanics, but physicists in this field, for the most part, do not concern themselves with cause and do not feel the need to do so. They are, however, interested in showing that the laws governing thermodynamics reflect more fundamental features of the world, an ongoing project that has not met with much success.[31]

Statistical mechanics follows a strategy widely practiced in physics and chemistry: devise some description of the transient states of a system and use it to generate law-like statements that predict its future states based on knowledge of the current one. The state of a system can be characterized by the position and momentum of its components. When their statistical distribution is known, the laws of dynamics allow prediction of future states. This operation relies on the artificial assumption that a random probability distribution can be substituted for knowledge about the local conditions in the system. The laws of dynamics offer no explanation for why systems tend to equilibrium or the means by which it is achieved. Physicists invoke non-equilibrium theory to justify the assumption that most systems exist most of the time in or near a state of equilibrium, although they recognize steady-state systems sometimes appear spontaneously, decay, or move to new equilibria.

Another example from statistical mechanics concerns crystallization, which represents a transformation from a local to more general order. When this occurs, each atom or molecule assumes a fixed position relative to the others in the crystal. Something similar happens in ferromagnetism, where the spins of atoms are consistent only with those of adjacent atoms until ferromagnetism creates a uniform alignment throughout the field. There are currently no explanations for these phenomena; they would have to be derived from a robust non-equilibrium theory. In the absence of such a theory, physicists assume the conditions necessary for long-range order and base their predictions on them. Generally known as renormalization group explanations, they depend on formal similarities in the transitions of many different systems from local to general forms of order.[32]

Most systems prepared in non-equilibrium states move to equilibrium. To ask why and how this happens, physicists must deploy some

[31] Sklar, *Physics and Chance*, p. 5.
[32] Lange, "Causation in Classical Mechanics."

underlying understanding of the statistical nature of things. One candidate is the Boltzmann–Ehrenfest principle of invariant systems; it attempts to account for why most systems spend most of their existence at or near equilibrium. Deviations from it are assumed to be frequent but less frequent as their order of magnitude increases. Small deviations are generally self-correcting, while larger ones have the potential to move systems out of equilibrium.[33]

These transcendental "explanations" are close to the Kantian conception of cause. To formulate laws of thermodynamics, physicists had to construct abstract, noumenal worlds that incorporated conditions theorized to be fundamental to the universe or its understanding. From them they also derive warrants for inference. The most important is that of equilibrium. In many empirical situations, distributions close to equilibrium are found. Helium gas at room temperature and the earth's atmosphere are cases in point. In non-equilibrium statistical mechanics, physicists recognize that the noumenal worlds they create are highly unrealistic in that they rely on initial conditions that are highly unlikely according to the laws of statistical mechanics. They assume a specific and wildly improbable initial set of conditions for the big bang and also for low-entropy initial states. To account for non-equilibrium behavior they must posit that physically isolated branch systems have entropies that increase simultaneously and in parallel with that of the system as a whole.[34]

A third understanding of cause has developed in cosmology, a largely historical science, like geology and evolutionary biology. Historical sciences are those in which initial conditions are extremely important and critical temporal sequences extend into the past – back to the big bang in the case of cosmology. These sciences rely primarily on observation as the ability to conduct laboratory experiments is very limited. Comparison is accordingly difficult, which makes scientists in these fields alert to the possibility of simulations and natural experiments. A telling example of the latter is the remarkable opportunity provided by Supernova 1987A for observing neutrinos. Japanese and American teams detected neutrino events almost coincident with the discovery of the light from the supernova.[35] These events provided useful information

[33] Sklar, *Physics and Chance*, chs. 5–7. [34] Ibid.
[35] Arafune and Fukugita, "Physical Implications of the Kamioka Observation of Neutrinos from Supernova 1987A"; Bionta, Blewitt, Bratton et al.,

for modeling supernovae and confirmation of theoretical expectations that supernovae would produce intense neutrino fluxes.

Cosmology is like geology and evolutionary biology in that the history of the universe is a one-time run like that of the earth and its life forms. It cannot be compared to other universes, although there is much speculation about whether they exist and what they might be like. Cosmology is also historical in the sense that the creation and early expansion of the universe are critical to explaining the existence and distribution of matter, and other important features of today's universe. When queried about explanation, many physicists say it involves accounting for something by reference to general principles. There is nevertheless a growing recognition in cosmology of the importance of singular causation. In our sample of one universe, we have no way of knowing if its initial conditions and current properties are contingent or expressions of laws, and, if laws, which of them are significant. It is possible that laws of nature are invariant, but that their parameters have assumed different values over the course of our universe's history. It so, then some processes may be responsible for these values, reinforcing the need, Lee Smolin contends, to understand cosmology in an evolutionary context.[36]

In all historical sciences there is a commitment to finding explanations for events or patterns of events. The mystery of so-called "dark matter" is a prominent contemporary example. Fritz Zwicky postulated its existence in 1934 to account for evidence of "missing mass" in the orbital velocities of galaxies in clusters. Subsequently, it has been invoked to account for the rotational speeds of galaxies, gravitational lensing of background objects by galaxy clusters, and the temperature distribution of hot gas in galaxies and clusters of galaxies. Astrophysicists want to know if such matter actually exists, just as nuclear physicists wanted to discover the Higgs Boson, so essential to the Standard Model. Explanations are more convincing when they include mechanisms seemingly responsible for observable events or patterns. In geology, Alfred Wegener proposed the theory of continental drift in 1912. It was based on the seeming physical match of the continents as pieces of a single jigsaw puzzle, but also on stratigraphic evidence indicating common morphology of rocks in places

"Observation of a Neutrino Burst in Coincidence with Supernova 1987A in the Large Magellanic Cloud."

[36] Smolin, *Life of the Cosmos*, p. 77.

where continents were assumed to have once been joined. The scientific community rejected continental drift because it ran counter to the prevailing orthodoxy that the continents were fixed. Wegener also hurt his case by failing to offer a plausible mechanism to explain continental drift. The debate was reopened in the 1960s, partially due to additional evidence, but primarily in response to the emergence of a credible causal mechanism: thermodynamic processes deep within the earth that create convection currents that move the plates on which the continents rest.[37]

Scientists are attracted to thin, Humean, accounts of causation when no mechanisms or processes can be found to account for observable regularities. In the case of system-level theories, the Boltzmann equation or Maxwell transfer equations for rare gases are notable exceptions. More typical is the long-standing quest for kinetic equations for dense gases, which so far have failed to produce anything comparable. Physicists in fields where systems tend toward equilibrium also generally dispense with the concept of cause because it is not necessary to make accurate predictions. Instead, they search for statistical regularities, devise law-like statements based on them and subsume particular manifestations to these laws. A vocal minority objects to this approach, arguing that causation must somehow be brought into the picture.

Overall, physicists have dispensed with cause in two kinds of situations: when empirical findings violate conventional understandings of the relationship between cause and effect, as in quantum mechanics, and when attempts to find causes are unsuccessful but unnecessary for making reliable predictions. Physicists prefer, when possible, to bring cause into the picture. There is a long-standing belief – better described as an ideology – that explanations are an important component of knowledge. There is also a growing recognition in historical branches of physics, as in other historical sciences, of the importance of narrative causal accounts.

The concept of cause

With its emphasis on conceptual precision and logical consistency, philosophy has developed and interrogated diverse formulations of

[37] Waldner, "Transforming Inferences into Explanations."

cause. The richness of this literature might paradoxically be considered its principal impediment. By demonstrating the inadequacy of all concepts of cause and ways in which they are incommensurable, philosophers of science unwittingly encourage us to reject as futile the project of developing a concept of cause that is logically rigorous and applicable to all kinds of events that might be considered causal.

The story begins with the pre-Socratic philosophers who sought to replace mythical accounts with empirical understandings of why things happened. Plato rejected these material philosophies and invoked an invisible world of forms to provide causes (*aitia*) for observable events. Aristotle offered a synthesis of earlier Greek thinking about cause that dominated Western thought down to early modern Europe. He distinguished four classes of cause (*aition*). First, is material cause, out of which other things are made, as a statue is from marble or bronze. Material cause enables and constrains how matter can be shaped. Second, is formal cause, which is the form or template (*paradeigma*) for things, as an architectural drawing is for a building, or DNA for life. Third, is efficient cause, which is the primary source of change. Efficient causes can be natural or human. Fourth, is final end (*telos*) or the goal for which something is created. In the case of an acorn it is to produce an oak tree. To avoid an endless chain of regression, Aristotle argued against trying to trace any of his four types of cause back to their original causes. He was, however, interested in the concept of the unmoved mover. Every movement, he wrote, is due to some mover, but the first mover is unmoved.[38]

The medieval scholastics kept alive Aristotle's four-fold understanding of cause. Aquinas inserted god as the "unmoved mover" and creator of the universe. In the late sixteenth and early seventeenth centuries, many scientists and philosophers – distinctions between these fields were still in their infancy – sought causes in the natural world. Descartes, Malebranche, Hobbes, Gassendi, Boyle, Newton, and Locke were important figures in reducing and simplifying the number and kind of causes.[39] Hobbes was the most committed to a materialist philosophy. He treated cause as a two-body problem. Material substances interact in accord with the laws of motion. He

[38] Aristotle, *Physics* 7.1–2, 8.4–5; *Metaphysics*, 2.2.
[39] Clatterbaugh, *Causation Debate in Modern Philosophy* and "Early Moderns."

attributed cause to the properties of the initiating agent and effects to the consequences of its action.[40]

To the extent there is a modern equivalent of Aristotle, it is Hume, whose formulation of cause is the starting point for contemporary understandings. Hume sought to purge the concept of all metaphysics and based it, as noted, on observable constant conjunctions. His Scottish colleague Thomas Reid was quick to observe that not all conjunctions are causal. Monday night always precedes Tuesday morning but can hardly be considered its cause.[41] To distinguish between causal and non-causal conjunctions, one must invoke some deeper understanding of cause, which is precisely what Hume was trying to avoid.

John Stuart Mill attempted to salvage Hume's formulation by expanding it to account for multiple causes in recognition that events are rarely the product of single causes. Antecedents, whether singular or multiple, often require enabling conditions to have their effects, and their absence can forestall them.[42] Mill developed his methods of difference and agreement to tease out these conditions. His more sophisticated approach to regularity builds on the intuition that a suite of conditions might be necessary to produce a given effect. He nevertheless follows Hume in insisting that there is no difference between cause and the antecedent condition of any regularity; the former is the cause.

Mill's godson, Bertrand Russell, raised a different objection to regularities. He observed that antecedent and consequent are assigned arbitrarily. What makes events alike or different, and some of them members of the same class, require precise criteria. These criteria can only be derived from an independent theoretical understanding of phenomena. This greatly complicates the problem of cause because it requires a return to metaphysics.[43] Russell was untroubled because he insisted that science had progressed beyond the concept of regularities to more functionalist understandings. John Dewey made a similar point. "No event comes to us labelled 'cause' or 'effect'," he insisted. These are categories we invent and assign.[44]

[40] Hobbes, *De Corpore*, I.75–6, 102, 122.
[41] Reid, *Essays on the Active Powers of Man*, Essay 4, ch. 3.
[42] Mill, *System of Logic*, Book III, ch. 5, section 3, pp. 215–18; Psillos, *Causation & Explanation*, pp. 59–66.
[43] Russell, "On the Notion of Cause."
[44] See Dewey and Bentley, "Knowing and the Known"; Davidson, "Action, Reason and Cause" and "Causal Relations," for a recent statement of this argument.

Controversies about cause in philosophy revolve around three fundamental questions: what is the nature of cause; is it a feature of nature or product of our imagination; and is singular cause possible? How philosophers respond to these questions generally turns on their understandings of the world and the relative importance they assign to explanation and prediction. Their debates make frequent use of examples, usually from physics, as most formulations of cause are intended to apply to the hard sciences. Given this focus, there is often no difference in moving forwards or backwards in time, making explanation and prediction equivalent. Very little effort has been made to address social causes, where this condition does not hold.[45]

What is the nature of cause? On this question, there is absolutely no consensus. Humean and other regularity theories offer thin definitions of cause in an attempt to avoid metaphysical foundations. Cause for them is efficient cause, and consists of finding antecedents that consistently precede consequents. In some fields of physics this works well because robust regularities can be found. It is also attractive in fields where physicists are unable to find deeper explanations for phenomena, as in statistical dynamics. The most serious limitation of efficient cause is that it depends on the discovery of regularities, if not constant conjunctions. Where they do not exist or are insufficiently robust, efficient cause is more difficult, if not impossible, to establish. Logically, the absence of constant conjunctions would compel us to conclude that there is no causation in these domains, which would be philosophically and conventionally unsatisfying. It also challenges a fundamental assumption of most regularity theorists that regularity and cause are features of the world.

Given these problems, many philosophers maintain that there must be more to cause than regularity. Some direct our attention to mechanisms or processes that might be responsible for events. The failure to secure a cargo door could explain an air crash, although a more satisfying explanation would also provide a reason, or reasons, why that door failed to close properly. We might also ask who was responsible for this problem: the aircraft designers or the ground mechanics. The mechanisms or causes we search for, and the level at which we

[45] Chernoff, *Power of International Theory*, pp. 54–5; Jackson and Nexon, "Paradigmatic Faults in International-Relations Theory." Notable exceptions include Nagel, *Structure of Science*; Hempel, "Function of General Laws in History."

search for them, are very much a function of how we frame a problem. One strategy to overcome the seeming superficiality of association is to subsume events or regularities to covering laws. The deductive–nomological (DN) model is the best-known statement of this position. Developed by Carl Hempel and Paul Oppenheim, it stipulates that an event (*explanandum*) is only explained when it is the product of a deductive argument, whose premise (*explanans*) is a law-like statement and a set of initial or antecedent conditions. These conditions need to be made explicit as must the links between *explanans* and *explanandum*.[46] In the plane crash example, the laws of aerodynamics could be invoked to explain why drag from an open cargo door prevented the aircraft from gaining the necessary speed and lift for a successful takeoff, although they could not explain why the cargo door was not properly closed.

The DN model cannot be described as causal because laws are not causes. It can, however, accommodate outcomes associated with observable statistical distributions. One of its principal drawbacks is that laws, by their very nature, are expected to be universal. This was not a problem for Hempel, who expected DN to be applied primarily to the physical world. It is, however, a serious impediment when we turn to the social world, where the level of scale is so often different. For physics and chemistry – the fields in which regularities in the form of constant conjunctions are possible – these regularities emerge from the interactions of phenomenally large numbers of atoms and molecules. One gram of hydrogen, for example contains 6×10^{23} atoms. These numbers allow scientists to describe system-level effects with a high degree of accuracy.

Only occasionally does this kind of analysis work in the social world. Engineers routinely treat all drivers and vehicles as equal when they model traffic flows, and assume that they all drive at the speed limit, which they know is not true in practice. They create closed systems and restrict their predictions to system-level effects. In dealing with open and non-linear systems like international relations, this is impossible when the number of actors is small and the differences among them great, as is the case in international relations.[47]

[46] Hempel, "Logic of Functional Analysis."

[47] Woodward and Hitchcock, "Explanatory Generalizations"; Lebow, *Cultural Theory of International Relations*, ch. 1. See Byrne and Uprichard, "Useful

Regularity theorists of all kinds advance "thin" conceptions of cause. For them, correlations are as close as we come to cause. Many positivists insist that association is a first step in establishing cause, but sophisticated statisticians are the first to acknowledge that statistical techniques cannot discriminate between association and causation.[48] Rudolf Carnap insists that associations should be regarded as causal because they encode a "functional dependency of a certain sort."[49] Carnap and Schlick consider the concept of cause something of a distraction, as the goal of science is prediction. Carnap nevertheless thinks it essential to distinguish predictions based on laws of nature from those that are not.[50] For both philosophers of science, and for Hempel as well, prediction is the logical equivalent of explanation, a claim that has become known as explanation–prediction–symmetry thesis.[51] Hempel acknowledges exceptions; statistical generalizations may account for past events but not predict future individual events. To address this situation, he developed the deductive–statistical (DS) model. He envisaged it as a placeholder for more complete DN account.[52]

An alternate approach to cause goes back to Kant, who was troubled by Hume's empiricism and what he considered its likely social consequences. Hume maintained that experience leads to causality through inference. He regarded reason as a mere instrumentality. Kant thought Hume had reduced reason to "nothing but a bastard of the imagination fathered by experience."[53] His goal was to show that cause, like all worthwhile metaphysical concepts, arises from "pure understanding."[54] Causation is the form of understanding that authorizes inference of cause and effect. Kant is adamant that such inference is rule based. "Everything that happens," he writes in the *Critique of*

Complex Causality," for a more upbeat take. They are optimistic about addressing causation in what they call situations of "restricted complexity," where it emerges from simple systems whose parameters are known.

48 McKim and Turner, *Causality in Crisis?*

49 Carnap, *Logical Structure of the World*, p. 264.

50 Carnap, *Introduction to the Philosophy of Science*, p. 192; Schlick, "Kausalität in der gegenwärtigen Physik" and "Causation in Everyday Life and in Recent Science."

51 Hempel, *Aspects of Scientific Explanation*.

52 Ibid., pp. 380–1.

53 Kant, *Prolegomena to any Future Metaphysic*, p. 257.

54 See Mackie, *Cement of the Universe*, ch. 4 for a thoughtful critique of Kant.

Pure Reason, "presupposes something upon which it follows according to a rule."[55]

Kant sought to provide a firmer grounding for cause by arguing that knowledge arises in space and time, intuitions about which are a priori categories of the mind. Cause cannot be established through Humean-style association because such claims lack strict universality or necessity. Nor can it be established through pure reason because it has the potential to produce dogma. We must explain events in terms of categories and associated concepts, and they do not arise from analysis but from intuitions that precede experience. To square this circle, Kant theorized – quite incorrectly, as it turned out – that our most fundamental intuitions are in accord with nature. Absolute space, he insisted, is "not some adumbration or schema of the object, but only a certain law implanted in the mind by which it coordinates for itself the sense that arises from the presence of the object."[56] Warrants of causality require transcendental justifications that subsume empirical observations to universal and absolute rules. Cause is a product of the mind but is empirically valuable because it describes the world.

Kantian causation looks beyond efficient cause to abstract "noumenal" worlds to generate law-like statements that can be used to make sense of the empirical world. As noted, this approach is used in physics to explain equilibria and certain phase transitions. In economics and political science, rational choice arguably qualifies as Kantian when those who employ it recognize that their assumptions of *homo economicus*, or of leaders with clear and transient preferences, are artificial constructs that do not describe real actors. Like the transcendental worlds created by physicists to study non-equilibrium statistical mechanics, rational choice and rationalist models of politics and international relations incorporate assumptions that have no empirical referents.

Is cause inherent in nature or a human invention? Philosophers defend both positions. Ludwig Wittgenstein insisted: "The only

[55] Kant, *Critique of Pure Reason*, A 189.

[56] See Kant, "Transcendental Aesthetic," A81/B107, A90/B122, A545/B573 and *On the Form and Principles of the Sensible and Intelligent Worlds*, §4, 2:293, for the quote. Also, Watkins, "Kant"; Allison, *Kant's Transcendental Idealism*; Guyer, *Kant and the Claims of Knowledge*; Beck, *Essays on Kant and Hume*.

necessity that exists is *logical* necessity."[57] Cause is a product of our imagination and has no scientific status. Hume also acknowledged the cognitive origins of cause, but, like so many other philosophers, desperately wanted to believe in a deterministic world.[58] This commitment gave an opening to Janet Broughton, Galen Strawson, John Wright, and other "New Humeans" to reinterpret the Scottish empiricist as a realist – unconvincingly in my opinion.[59]

The "New Humeans" treat cause as a feature of the world. Most go beyond Hume in insisting that causality must be regularity plus something else. Otherwise, it is impossible to distinguish between conjunctions that reflect laws of nature and those that are merely accidental or true by convention, like Reid's observation that Tuesday morning always follows Monday night.[60] Galen Strawson looks to forces to explain regularities, while other philosophers posit the existence of deeper laws of nature that are not themselves regularities. This "thick" approach to cause is by no means limited to "New Humeans." It is appealing to a diverse range of regularity theorists, including Stephen Mumford, Brian Ellis, and George Molnar.[61] One formulation, known as the web-of-laws approach, originating with John Stuart Mill, was elaborated by F. P. Ramsey and subsequently by David Lewis.[62] It maintains that the only regularities that qualify as laws of nature are those that can be fitted into a larger, holistic structure. DN is consistent with this approach. Some advocates have attempted to demonstrate that laws of nature are necessary, an approach known as dispositional essentialism.[63] The principal objection to "regularity plus," DN included, is that it pushes back the search for causation to another ontological level. By doing so, Bertrand Russell long ago noted,

[57] Wittgenstein, *Tractatus Logico-Philosophicus*, §6.37.
[58] Hume, *Enquiry Concerning Human Understanding*, VIII.1.13.
[59] Strawson, *Secret Connection*, pp. 84–5; Broughton, "Hume's Ideas about Necessary Causation" and "Hume's Skepticism about Causal Inferences"; Wright, *Skeptical Realism of David Hume*; Beebee, *Hume on Causation*; Blackburn, "Hume and Thick Connexions"; Richman, "Debating the New Hume" and the other essays in Read and Richman, *New Hume Debate*.
[60] Kneale, *Probability and Induction*.
[61] Mumford, *Dispositions* and "Causal Powers and Capacities"; Ellis, *Scientific Essentialism*; Molnar, *Powers*.
[62] Mill, *System of Logic*; Ramsey, "Universals of Law and Fact"; Lewis, "Causation."
[63] Ellis, "Causal Powers and the Laws of Nature" and *Scientific Essentialism*; Ellis and Lierse, "Dispositional Essentialism."

it sets in motion an infinite regress of "unexplained explainers."[64] This problem prompted Wittgenstein to quip that "a nothing could serve just as well as a something about which nothing could be said."[65]

Regularity plus pits phenomenalists against realists. The former refuse to go beyond experience – that which can be observed and described – in their search for knowledge.[66] Embracing the phenomenalist position, some regularity theorists accordingly insist that regularities can only be explained in terms of deeper regularities, which would stay within the realm of the observable. These theorists acknowledge that any other kind of explanation would downgrade the importance of regularities.[67] Bas van Fraassen maintains that any account of laws needs to satisfy two conditions: it must stipulate how regularities are to be identified – that is, what distinguishes them from accidents – and how we make valid inferences from laws to regularities. Since laws can be considered regularities, reductive Humean accounts solve the inference problem but not the identification one.[68]

A middle position has recently emerged that attempts to build on Hume. Stathis Psillos argues that causation is a joint product of the world and humans. Likeness, he maintains, is based on "objective similarities and differences among events in the world and patterns of dependence among them." These likenesses are never exact but involve "degrees of similarity," and are thus, at least in part, "of our own devising." The designation of events and their categorization are acts of the human imagination, but can be made in response to "natural classes" of events that are "the product of the world alone."[69] In this account, cause ultimately has some objective reference, and if two researchers disagree one of them must be wrong.[70] Perhaps

[64] Hume, *Enquiry Concerning Human Understanding*, 4.17, offers the example of trying to explain bread in terms of its chemical composition. See Russell, "On the Notion of Cause," for the quote.

[65] Wittgenstein, *Philosophical Investigations*, §304; also Carnap, *Logical Structure of the World*, p. 264; Ayer, "What Is a Law of Nature?"

[66] van Fraassen, "To Save the Phenomena," *Scientific Image* and *Empirical Science*, for the views of a leading proponent of this approach. See Jackson, *Conduct of Inquiry in International Relations*, for a perceptive analysis of the two schools of thought.

[67] Psillos, "Regularity Theories."

[68] van Fraassen, *Laws and Symmetry*, pp. 38–9.

[69] Ibid.

[70] Williamson, "Probabilistic Theories."

this approach might prove useful in some branches of physics, but it is more difficult to apply to biology, where any typology of life-forms is understood as subjective and to some degree arbitrary. In the social world where, individual human beings aside, there are no natural kinds, it is deeply problematic.

Other philosophers deny causality on empirical grounds. In 1909, prior to quantum mechanics, Franz Exner insisted that chance governed all natural events.[71] Ernst Mach and Karl Pearson made similar assertions in the first decade of the century.[72] In 1913, Bertrand Russell characterized causality as "a relic of a bygone age, surviving like the monarchy, only because it is erroneously supposed to do no harm."[73] The search for cause was dropped in many branches of science. The 1980s witnessed the growth in social science of artificial intelligence and Bayesian networks. Both approaches rely on the probability distributions and attempt to finesse the problem of cause.

Other philosophers have sought to widen, rather than narrow, our understanding of cause by moving away from Hume toward Kant, or even back to Aristotle. In 1932, Philip Frank contended that the law of causality could not be proven empirically but must be assumed a priori. He later modified his position to take into account Ludwig von Mises' conception of statistical laws. He insisted that it is impossible to derive any proof for the validity of a priori laws, but that science and everyday life depend on their existence.[74] Frank's position is a Kantian one as it distinguishes between an unobservable but nevertheless "real" world that provides laws we use to describe the empirical world. In his 1957 magnum opus, he explicitly distinguishes between Humean and Kantian understandings of causation. He thinks the latter might provide the basis for reconciling causal and statistical laws.[75]

Another approach that has attracted considerable attention is causal process models. It is rooted in process philosophy, developed by Alfred North Whitehead, Paul Hartshorne, and Paul Weiss. Whitehead emphasizes the centrality of temporality, change, and passage to our world.[76] He insists that "Becoming is as important as being, change as stability."[77] Nicholas Rescher, the most prominent

[71] Lange, "Causation in Classical Mechanics."
[72] Mach, *Science of Mechanics*; Pearson, *Grammar of Science*.
[73] Russell, "On the Notion of Cause."
[74] Frank, *Causality and Its Limits*.
[75] Ibid., *Philosophy of Science*, pp. 238–9.
[76] Whitehead, *Concept of Nature*, ch. 3.
[77] Rescher, *Process Philosophy*.

contemporary advocate of process philosophy, characterizes a process "as an actual or possible occurrence that consists of an integrated series of connected developments unfolding in programmatic coordination: an orchestrated series of occurrences that are systematically linked to one another either causally or functionally."[78] Process approaches are concerned with the problem of change and the dynamics or mechanisms that bring it about. The theory of evolution is the best-known process theory in science.

Among philosophers, Wesley Salmon is the leading theorist of causal process models. He builds on Russell's concept of "causal lines." Salmon defines causal processes as the "world-lines of objects exhibiting some characteristic essential for causation." A process describes anything with a relatively constant structure. It can be real or pseudo, as long as it leaves some kind of mark. The key is what Russell calls "quasi permanence," and Salmon reframes as "constancy of structure." A trajectory through time can be considered causal if it does not change too much and persists when isolated from other things. A ball moving through the air has quasi-permanence because it can be marked. A spot of light projected onto a wall does not transmit a mark, as changing the angle of the wall will change the shape of the light cone. Both are nevertheless continuous spatio-temporal processes.[79]

More distinctly Aristotelian is the causal powers approach. It is associated with scientific realism, a philosophy of science that received prominent statements in the works of Rom Harré and Roy Bhaskar and subsequent writings by Nancy Cartwright and C. B. Mart.[80] In international relations a variant known as critical realism is advanced by Heikki Potomäki, Colin Wight, and Milja Kurki, among others.[81] The core assumption of critical realism is that the world is largely independent of us and differentiated in the sense of being structured,

[78] Ibid., p. 22.

[79] Salmon, "Why Ask, 'Why?'," *Scientific Explanation and the Causal Structure of the World* and *Causality and Explanation*; Dowe, "Causal Process Theories"; Davidson, "Causal Relations" and "Laws and Cause."

[80] Harré, "Powers"; Harré and Madden, "Natural Powers and Powerful Natures" and *Causal Powers*; Bhaskar, *Realist Theory of Science*; Cartwright, *Dappled World* and *Hunting Causes and Using Them*.

[81] Patomäki, *After International Relations*; Kurki, *Causation in International Relations*; Wight, *Agents, Structures and International Relations*.

layered, and complex. These layers interact, making all systems open and subject to emergent properties.[82]

Realists contend that the world should be understood as an ensemble of powers, propensities, and forces that explain complex interactions and events. Examples in physics include the spin, charge, mass, and decay of particles. Causal properties confer "dispositions on particulars that have to behave in certain ways when in the presence or absence of other particulars with causal properties of their own."[83] While causal properties are unobservable, scientific realists insist they are nevertheless a fundamental ontological category. Each causal property is expected to manifest itself in specific ways, but can remain latent if not stimulated, enabled, or otherwise activated. Causal properties give rise to tendencies rather than fixed laws (e.g., the tendency of states to balance against more powerful or threatening states), which, together with the open-ended nature of the world, explain why there are no constant conjunctions.[84] Scientific and critical realists are interested in the kinds of causal properties that exist and the mechanisms that make them manifest.[85] This approach stands in sharp contrast to Humean association, in which the only relations that count are those of spatial and temporal contiguity. Causation is extrinsic to them and observed through cause-and-effect pairs of regularity.[86] Harré and Madden deride Humean association as "a picture of nature as a crowd of passive sufferers of external and imposed causality."[87]

Roy Bhaskar contends that most science operates in contexts in which the creation of closed systems, even in laboratories, is not feasible. This makes it difficult, if not impossible, to identify causal powers and generate laws.[88] His *Possibility of Naturalism* proposes that complex events be divided into their components, and that these be reframed as abstractions or idealizations. Rom Harré elaborates such a

[82] Bhaskar, *Scientific Realism and Human Emancipation*, p. 61; Patomäki, "Concepts of 'Action,' 'Structure' and 'Power' in 'Critical Social Realism'."
[83] Bhaskar, *Possibility of Naturalism*, pp. 15–16; Chakravartty, *Metaphysics for Scientific Realism*, p. 108.
[84] Bhaskar, *Realist Theory of Science*, pp. 46–7.
[85] Mumford, "Causal Powers and Capacities"; Jackson, *Conduct of Inquiry in International Relations*, pp. 72–111, for an excellent overview.
[86] Beebee, "Causation and Observation."
[87] See Harré and Madden, "Natural Powers and Powerful Natures" for quote, and *Causal Powers*.
[88] Bhaskar, *Realist Theory of Science*, pp. 46–7.

process of "iconic modeling," and offers it as a method to probe complex patterns of causation and eliminate weak hypotheses.[89] Heikki Patomäki considers it appropriate to evaluating all four categories of Aristotelian causation. Like other critical realists, he maintains that social relations are located in time and space, in an intransitive dimension that exists largely independently of our conceptions of the world or those of actors. Cognitive and discursive frameworks, which constitute the epistemological dimension of social relations, are nevertheless important.[90]

The most controversial causal power theorist is Nancy Cartwright, whose most recent books explore the implications of the causal powers for science. She argues that physical theories are rarely able to explain real events given the multiplicity of factors invariably responsible for them. We also require interpretative models and good engineering in all but the most carefully controlled laboratory experiments. Laws predict only when "nomological machines" have been constructed to guarantee that "all other things are equal."[91] She offers the example of a banknote falling from a tower. Newton's law of gravitation governs its motion, but does not predict the banknote's path or how soon it will reach the ground. This is because other forces come into play, most notably friction and air currents. Here, too, there are laws, but they are equally useless for purposes of prediction because they tell us nothing about the specific wind vectors or their non-linear interactions. The broader point is that the laws of physics are abstract formulations that can rarely be applied directly to real-world situations without introducing multiple laws and lots of fancy engineering. The social world presents a greater challenge because we generally lack laboratories and the controlled variation they allow. In the absence of laws, which most often are derived from experiments, it is that much more difficult to identify the features of context that are most likely to affect particular processes and situations.

Physicists, she contends, must give up their cherished expectation that science will one day give us equations of unrestricted validity and applicability. Scientific truths exist at different levels and it is

[89] Harré, *Philosophies of Science*; Harré and Madden, "Natural Powers and Powerful Natures" and "Exploring the Human Umwelt."

[90] Patomäki, "Telling Better Stories about International Relations" and *After International Relations*, ch. 5.

[91] Cartwright, *Dappled World*, p. 50.

impossible to combine them into an overall, consistent formulation.[92] Some critics of scientific realism consider this approach enigmatic, if not quaint, given Cartwright's turn to Aristotle.[93] Others contend that the causal powers research program says little to nothing about the features of things that are causally relevant or the conditions in which latent powers become manifest. Nor, more importantly, does it tell us how we would even go about finding answers to these questions.[94]

Is singular cause possible? Singular cause refers to events that are causal but non-repetitive. Hume denies singular causation, as does the DN model.[95] Saul Kripke insists that "when the events *a* and *b* are considered by themselves alone, no causal notions are applicable."[96] Regularity theorists of all kinds consider singular causation something of an oxymoron.

John Dewey was an early proponent of what would become known as singular causation. He insisted that events are never repetitive as they are never the same in all their important dimensions. The social world is not mechanically reproductive because of agency, uniqueness and contingency.[97] Among contemporary philosophers, the most influential advocate of singular causation is Michael Scriven, who maintains that what has happened in the past, and what might happen in the future, is irrelevant to many causal sequences. He offers the example of a bottle of ink that spills and stains a carpet. Not all ink bottles spill, not all ink spills overflow desks, and not all desks are on carpets. We best account for such events by causal narratives that draw on situation-specific information. More general understandings may guide us to information relevant to these narratives.[98] For Humeans, causation is an extrinsic feature of the world that takes the form of regularities. For singularity theorists, it is intrinsic and a function of the sequence of events connecting two relata.

Confluences, where a multiple stream of independent conditions come together to produce an event that would not otherwise occur,

[92] Cartwright, *How the Laws of Physics Lie*; *Nature's Capacities and Their Measurement*, *Dappled World* and *Hunting Causes and Using Them*.
[93] Giere, "Models, Metaphysics and Methodology."
[94] Woodward, *Making Things Happen*, p. 357.
[95] Hume, *Enquiry Concerning Human Understanding*, XII.138; Hempel, *Aspects of Scientific Explanation*.
[96] Kripke, *Wittgenstein on Rules and Private Language*, pp. 67–8.
[97] Dewey and Bentley, "Knowing and the Known."
[98] Scriven, "Explanations, Predictions and Laws."

qualify as singular causation. J. L. Mackie offers the example of a house fire caused by short-circuit and a spark that ignites something combustible. Let us introduce further complexity by supposing that the owners left a candle burning on their windowsill – a common practice at Christmas time – and went off to a party. The window had a bad seal, allowing a draft to enter the room and blow the curtain close enough to the candle to catch fire. The fire alarm did not work because the couple had failed to replace a worn-out battery.[99] In either scenario, cause cannot be attributed to a single factor, and Mackie draws on Mill, to formulate the concept of INUS conditions. These are insufficient but non-redundant parts of a condition that is itself necessary but insufficient for the occurrence of the effect. Each of the contributing causes of the fire in the above example qualifies as an INUS condition. Mackie's approach allows us to account for complex causal situations, but is open to the criticism that it cannot distinguish between real causes and the cumulative effects of a possible common cause.[100] To do so, would require knowledge independent of and prior to the set of INUS conditions postulated to know that they met these conditions.

Mackie objects to Humean association on the grounds that it cannot encompass singular causal statements, but his account of causation is not that dissimilar from Mill's.[101] Donald Davidson moves even further in this direction than Mackie by insisting that singular causal narratives are reconcilable with Humean association if subsumed to some kind of law.[102] Anscombe has famously criticized this argument as representative of dogma unsupported by empirical examples.[103] Perhaps the strongest case for singular causation is made by C. J. Ducasse, who insists that objects and substances cannot be the relata of causal relations. The tree did not injure the lumberjack, but the falling tree did. Such events, Ducasse maintains, change the properties of things. In the examples he offers, there is no regularity. The next tree is unlikely to fall and the next one that does is unlikely to injure a lumberjack. Ducasse allows for causal regularities, but argues

[99] Mackie, *Cement of the Universe*, pp. 34–9.
[100] Psillos, *Causation & Explanation*, pp. 90–1; Kim, "Causes and Events."
[101] Mackie, *Cement of the Universe*; Psillos, *Causation & Explanation*, pp. 81–92.
[102] Davidson, "Causal Relations."
[103] Anscombe, "Causality and Determination."

that Hume has improperly made them the norm and deduced causation from them. Regularities should be understood as "corollaries" of causation, not definitions of them. Laws in turn are generalizations based on singular facts.[104]

Summing up

Each of these approaches to causation has advantages and serious drawbacks. Humean conjunction is straightforward and builds on the seemingly hard-wired human cognitive proclivity to make causal connections between events. It finesses the need for thicker, metaphysical understandings, but only works in a limited range of circumstances where there are constant, or near-constant, conjunctions. It has problems distinguishing between regularities that reflect so-called laws of nature and those that are accidental. It cannot cope with singular causation. It is also debatable whether constant conjunction qualifies as causation because no mechanism responsible for it is specified.

Humean conjunction frames cause and effect as a binary relationship. This is a deeply problematic assumption, especially in the social world. The presence or absence of what are considered causes and effects, of necessity, involves arbitrary judgments. This is readily apparent when we look at the most commonly used definition of war by international relations (IR) theorists – interstate conflicts that produce 1,000 or more fatalities – or the definition of a recession in economics – two consecutive quarters of downturns in GDP. The bivalence principle of logic – which stipulates something is or is not the case – constitutes another conceptual drawback, as so many events cannot be categorized as "either–or." Hypothesized causes and outcomes in the social world usually come in degrees, many of them arrayed along multiple dimensions.[105] This is true for ethnic conflicts, interstate war, arms races, territorial conflicts, inflation, economic downturns, negative and positive balance of payments, loss of consumer confidence, and competition for scarce resources. How much of something is just as important a question as its presence or absence, as certain degrees of presence can produce phase transitions in politics, economics, and

[104] Ducasse, *Truth, Knowledge and Causation* and *Causation and Types of Necessity*.
[105] Kratochwil, "Of False Promises and Good Bets."

social relations more generally. Carl Hempel insists on a "high probability" of a statistical probability if something is to count as a cause. This criterion is woefully imprecise.[106]

Humean conjunction cannot account for equilibria. When simultaneous forces interact to maintain an equilibrium state, the study of regularities tells us nothing about this process.[107] Nor can regularities offer any insight into when a particular combination of forces will move a system out of equilibrium, or possibly into a new one. Humean conjunction fails to distinguish between difference making and production. Most of the time a bullet is fired into someone's head it proves fatal. Although the bullet produces death, it is not difference making if it was only one of a hail of bullets, as would be the case with a firing squad.[108] Even when a single bullet is fired and kills its intended victim, or a single sperm fertilizes an egg, these events represent only the last steps of causal chains. What we really want to know are the conditions under which people are brought before firing squads and those in which they have unprotected sexual intercourse. All of these problems and omissions suggest that the concept of regularity does not map well on to the social world or tell us much that is critical when it does.

Regularity theories in science most often depend on large numbers and statistical probabilities. Physics and chemistry – the fields in which regularities in the form of constant conjunctions are possible – base these regularities on the interactions on phenomenally large numbers of atoms and molecules. They also establish, as far as possible, a closed system and limit their predictions to system-level effects. In dealing with open systems, this is not possible, especially in fields like international relations where the number of actors is small and the differences among them great.[109]

Regularity theories nevertheless appeal to many philosophers. Their defense rests on a foundation laid in the early nineteenth century by Scottish philosopher Thomas Brown. His *Inquiry into the Relation of Cause and Effect* dismissed the search for deeper causes as metaphysical and unscientific. Regularity is causation, pure and simple. Modern-day regularity theorists maintain that regularity has the additional advantage of providing the basis for prediction. They contend

[106] Hempel, *Aspects of Scientific Explanation*, pp. 381–405.
[107] Martin, "Power for Realists." [108] Godfrey-Smith, "Causal Pluralism."
[109] Lebow, *Cultural Theory of International Relations*, ch. 1.

that their approach is consistent with realism on the grounds that regularities represent reality and are independent of the mind. As noted, this approach finds wide, but by no means universal, support among physicists.[110]

There are, of course, divisions within the regularity camp. Some philosophers subscribe to the so-called "strong formulation" that builds on Mill's response to Reid. It holds that it is not enough that "A" regularly follows "B," but must do so under all conditions. Such a requirement is designed to make it unnecessary to specify mechanisms that might be responsible for the regularity.[111] Other theorists accept the probabilistic nature of regularities. Still others want to look for deeper regularities to explain the more superficial ones we find. They are all phenomenalists in their insistence that causation be limited to observables.

The DN model was invented to address the problem of causal versus accidental correlation by offering a more comprehensive conception of cause anchored in covering laws. Even more than its Humean predecessor, the DN model directs the attention of researchers away from explanation to prediction. Nelson Goodman observes that it reverses the stated relationship between a law and its implications: "rather than a sentence being used for prediction because it is a law, it is called a law because it is used for prediction."[112] Predictions may be possible in many branches of science but are notoriously unreliable in the social world for reasons I will examine in Chapter 2.

DN purports to describe the empirical world, but all social laws and the concepts on which they must be based are human creations. There is no privileged point outside the world from which to observe or engage it. Our concepts are the product of our language, a medium in which all researchers and human beings are immersed. Supporters of DN acknowledge that laws would be subjective, but insist they would not be arbitrary if they were repeatedly tested and refined by empirical application to the real world.[113] The DN approach – not very successfully in the opinion of its critics – attempts to walk a fine line between the perceived need to ground regularities while avoiding metaphysical commitments. To escape this dilemma, Willard Quine

[110] Psillos, "Regularity Theories."
[111] Ramsey, "Universals of Law and Fact"; Lewis, "Causation."
[112] Goodman, *Fact, Fiction and Forecast*, p. 21.
[113] Psillos, "Regularity Theories."

and Nelson Goodman suggest rooting law-like statements in natural kinds. Stathis Psillos observes that this approach verges on tautology "since it seems that for a regularity to be a law it should constitute a pattern among natural kinds . . . and conversely for a kind to be natural it should be part of a numerological pattern."[114]

Humean and DN models are universalistic in their claims, which is appealing to some researchers but unacceptable to constructivists. DN assumes a world amenable to covering laws. Such a world is not only realist but, more demanding still, must be hierarchical, with each ontological level sufficiently independent to allow the kind of parsimonious propositions on which covering laws are built. It would therefore be possible to integrate these propositions and laws into more holistic understandings. All these assumptions, Nancy Cartwright convincingly argues, are sharply at odds with empirical reality.[115]

Regularity theories, including DN, are realist because they treat causes and effects as natural kinds. Even if this were true, John Venn noted over a hundred years ago, they would still be subjective because they require reality to be organized in terms of event types.[116] Venn considered the construction of such categories a joint product of nature and human beings. Reference types could be constructed too narrowly or too broadly; they could exclude members of an event type or fail to exclude non-members. Regularity theories very much depend on properly calibrated descriptions of causal relata. This is often problematic in the sciences, and more so in the social world where none of the relata are natural kinds.

As noted, regularity theories and the DN model assume that repeated efforts at falsification will bring about a tighter fit between our theories and the world. In the physical and social sciences, refutations are rarely accepted as such but more often understood as problems of measurement or experimental error and "put right" by manipulating the data or explained away as anomalies.[117] On occasion, theories that are refuted subsequently turn out to be right, and even when they are wrong, may open up fruitful lines of inquiry. For different reasons, Quine, Kuhn, Lakatos, and Feyerabend have all argued that refutation is not only a difficult task but also rarely the reason why scientists give

[114] Quine, "Natural Kinds"; Goodman, *Fact, Fiction and Forecast*.
[115] Cartwright, *How the Laws of Physics Lie*.
[116] Venn, *Principles of Empirical or Inductive Logic*, p. 98.
[117] Lebow, "What Can We Know?"

theories up.[118] So here, too, the practice of science differs notably from the assumptions about it built into causal models.

Scientific realism, the dominant causal powers approach, frames cause in terms of potential and enabling conditions. This two-stage formulation is appropriate to many physical and political phenomena. It has the further advantage of going beyond regularities in the search for causation. Capabilities can produce regularities, but only under the special conditions created by nomological machines.[119] Scientific realism's complexity may be its greatest drawback, as it is not evident how we determine the causal properties of things, or if this can be done independently of the conditions or processes that trigger or release them. For this reason, scientific realism skirts circularity. In Nancy Cartwright's example of aspirin, it provides relief in only some circumstances even if its capability will always be present.[120] But what kind of inference – if we exclude observable effects – would allow us to establish this universal capacity?[121] Realists maintain that causal properties of this kind can be established in laboratory experiments, which links realist explanations to a method of inquiry that has only limited applicability to the world of international relations.[122]

Kantian idealism also offers a richer formulation of causation that, in common with DN models, makes a fundamental distinction between association and cause. Cause must be something general, if not universal. For DN, there is a process of tacking back and forth between concepts and empirical findings, adjusting or revising the former to provide a better fit. For the Kant of the First Critique, we are part of the world and our concepts are often in tune with it by virtue of our nature, although they must also demonstrate empirical utility.

Kantian causation differs from DN in that its general concepts are more independent of the empirical world and never considered a superstructure to which empirical findings can be assimilated. Rather, they

[118] Quine, "Two Dogmas of Empiricism"; Kuhn, *Structure of Scientific Revolutions*; Lakatos, "Falsification and the Methodology of Scientific Research Programmes"; Feyerabend, *Against Method*. For a sophisticated counter-argument, see van Fraassen, *Empirical Stance*.

[119] Cartwright, *Nature's Capacities and Their Measurement*, p. 3.

[120] Ibid., p. 3.

[121] Morrison, "Capacities, Tendencies and the Problem of Singular Causes"; Psillos, *Causation & Explanation*, pp. 195–6.

[122] Wight, "They Shoot Dead Horses Don't They?"; Patomäki, *After International Relations*.

represent a noumenal world of abstract relations, which are unlike any empirical world but provide insight into it. In certain branches of physics, notably, statistical dynamics, this approach works well. In social science, Kantian causation finds its most direct expression in equilibrium theories – as long as their proponents consider them noumenal worlds that can be used to analyze empirical ones. In Chapter 4, I argue that noumenal worlds, like regularities, are useful starting points for causal narratives or forecasting.

Lessons

My cursory overview of causation in physics and philosophy suggests several conclusions. The first is the extent to which developments in philosophy parallel those in physics. During the course of the twentieth century both disciplines were drawn to diverse approaches to cause. Philosophers proved far more reluctant than physicists to let go of the concept. There are discipline-specific reasons for their perseverance, the principal one being the central place of logic in philosophy and the possibility that cause can provide logical connections between events. At a more fundamental level, the concept of cause offers a possible foundation for knowledge claims.

The second and more important finding is the problematic nature of any concept of cause.[123] Over the centuries, philosophers have devised different approaches to cause in the hope of making it logically more rigorous and empirically more applicable to the physical world. The most important step in this direction, which began in the Renaissance, was restricting cause to one of its four Aristotelian components: efficient, or immediate, cause. This radical move benefitted science, but created as many problems as it finessed. Hume's formulation of efficient cause, which offers an intuitively appealing simplification, is uncomfortably constricted and incomplete in the absence of mechanisms linking cause to effect. The search for mechanisms ineluctably drew philosophers and researchers back into the seeming morass of multiple kinds of causes from which their predecessors had been desperate to escape. No formulation has been able to meet the test established by philosophers of logical consistency and empirical adequacy.

[123] Psillos, "Regularity Theories."

The latter condition refers to its ability to account for all situations generally considered to involve cause.

Social scientists have remained largely impervious to the developments in philosophy. Most pay no attention to questions of epistemology, and when asked to defend what they do, tend to offer relatively unsophisticated or even confused understandings. In the US, many social scientists fall back on some variant of neopositivism. This is not without irony, as most consider the quest for cause the goal of science, but, in practice, restrict themselves to searching for associations. King, Keohane, and Verba's, *Designing Social Inquiry* exemplifies both problems.

Physics has an important lesson to teach us: one size does not fit all. The relevance of cause, and divergent understandings of it, differs across fields and subfields of physics. Like physicists, we should feel free to approach causation in ways that seem most appropriate to the subjects we study. Reasonable arguments can be made for most other approaches to causation – especially if we treat them as starting points for causal narratives that fold in idiosyncratic features of context. We can nevertheless benefit enormously from clarification and critique of the ontological and epistemological assumptions and implications of these approaches to cause. Recent books by Milja Kurki and Patrick Jackson make important contributions in this regard.[124] I have tried to follow their example in this chapter.

While an advocate of pluralism, I find existing approaches to causation unsatisfactory for reasons I have made clear. In the next chapter, I show that they are even more inapplicable to the field of international relations. I then outline my approach to the problem. It starts from the assumption that in the absence of constant conjunctions, we cannot finesse the problem of cause. We must look for the mechanisms and processes that may be responsible for the outcomes we observe. Even so, they will never do more than appear to explain some of the variation we observe. Mechanisms and processes operate in contexts, and these contexts determine the effects they have. We must consider two levels of context: the most superficial, where diverse conditions enable or constrain causal mechanisms; and a deeper level, where mechanisms themselves become possible. Some mechanisms are independent

[124] Kurki, *Causation in International Relations*; Jackson, *Conduct of Inquiry in International Relations*.

of cognition, while others depend on the understandings actors have of themselves and the world. We must on occasion go back to deep frames of reference that condition these understandings.

The intensive study of context draws us into what is unique about events and developments. This approach, that I call inefficient causation, is not to deny the use of event types; it would be impossible to do comparative analysis in their absence. Rather, it suggests that most events of interest to international relations scholars can only loosely be classified in terms of type because they are generally instances of singular causation. Events of this kind cannot be explained by general rules derived from past events; nor can their outcomes be used to predict future ones. Past events, and our understanding of them, are useful only to the extent that they become starting points for causal narratives that fold in context. General understandings can be for forecasting, but here too they do nothing more than provide initial entry points for narrative construction.

2 *Inefficient causation I*

'Tis sufficient to observe, that there is no relation, which produces a stronger connexion in the fancy, and makes one idea more readily recall another, than the relations of cause and effect betwixt their objects.

David Hume[1]

In this chapter, I ask how applicable the approaches to causation I interrogated in the last chapter are to international relations. I evaluate these approaches with reference to two criteria: their comprehensiveness and their empirical fit with the political world. Regularity theories and the DN model come off the worst; other approaches show varying degrees of promise. I outline a new approach that I call inefficient causation. It aims to build bridges between general understandings and specific features of context. It assumes that most important international outcomes are context dependent and therefore best characterized as instances of singular causation. It is rooted in an understanding of the political world as open-ended, non-linear, and reflexive.

Causal understandings

I begin my evaluation with regularity theories, the preferred framework of many quantitative researchers and positivists. Regularity theories severely restrict our causal horizons. They cannot account for and accordingly ignore important causal patterns and phenomena, including equilibria, emergent properties, and singular causation. They cannot capture confluences, path dependency, and other forms of complex causation. Regularity theories allow predictions in domains where there are robust correlations, if not constant conjunctions. The latter are rare in the social sciences, and non-existent in

[1] Hume, *Treatise of Human Nature*, I, iv.2.

international relations.[2] Because correlations in our field are always imperfect, researchers must decide how much variance any variable must explain to qualify as a cause. This is the very situation Hume sought to avoid by insisting on constant conjunction. To circumvent this problem, some regularity theorists look for deeper regularities to explain more superficial and imperfect ones. This strategy is a nonstarter in international relations where there are no robust, deeper regularities. Here, too, we find at best imperfect associations.

Most correlations in international relations and comparative politics account for only a small percentage of the variance. This truth is unwittingly demonstrated in a widely cited article by James Fearon and David Laitin on ethnicity, insurgency, and war. They claim to demonstrate that internal war can be explained by a combination of poverty, political instability, rough terrain, and large population. In their conclusion, they address the substantive as opposed to statistical value of the claims. The strongest effects they find increase the probability of civil war from roughly 5 to 15 percent for a country sometime in the next five years. This holds only for countries with extreme scores on their several variables (10th percentile and below or 90th percentile and above). As the overwhelming majority of countries fall inside these extremes, and include countries that are or have recently experienced internal wars, the regularities they claim to have found tell us nothing meaningful about the real world.[3] This problem is endemic to the quantitative literature.

The more robust the association in international relations, the more trivial it is likely to be. One of the most important findings of quantitative research is that neighboring political units are more likely to go to war with one another than they are with units with whom they share no frontier.[4] Even this association is far from invariant. It cannot explain why some neighbors have violent relationships and others peaceful ones, and still others experience periods of war followed by peace, as in the case of Canada–United States, Denmark–Sweden, France–Germany, and China–Japan. Regularity theories offer no insight into how relationships between dyads evolve, nor can they predict what will

[2] See Little, "On the Scope and Limit of Generalizations in the Social Sciences," on the weak nature of generalizations in the social sciences and the problems of using them for predictions.
[3] Fearon and Laitin, "Ethnicity, Insurgency, and Civil War."
[4] Hensel, "Territory."

happen in any dyad.[5] Some international relations scholars insist that there is at least one constant conjunction in their field: the Democratic Peace. Jack Levy and Gary Goertz describe the empirical finding that democracies do not fight as an absolutely robust correlation.[6] Critics of the Democratic Peace consider it an artifact of data sets, a finding that may have other causes or accuse its advocates of constructing data sets to support their ideological commitment to the proposition.

Fred Chernoff, whose work I greatly admire, accuses me of setting too high a bar for regularity theories by focusing on point prediction.[7] He invokes Karl Popper's typology of prediction: prophecy versus technological, long-term versus short-term and prognosis versus prediction.[8] Popper rejects point predictions as infeasible in most situations, in contrast to probabilistic predictions. Hidemi Suganami contends that prediction has a still wider range of meanings in international relations. With regard to war, it can signify the likelihood of war in general, one between specified adversaries, and the frequency of war over time. I would add to this list the frequency of different kinds of wars.[9] In a recent book, I argue estimating the frequency of different kinds of war is a more realistic task for international relations theorists than predicting specific wars.[10]

As this discussion readily makes apparent, prediction in international relations has a wide lexical field. Prediction in general can nevertheless be distinguished effectively from forecasting. The former uses a theory or regularity to identify a future outcome, although often states it as a probability. Predictions are generally either–or (e.g., war will or will not occur, interest rates will or will not go up or down), but involve degree when they address trends. Forecasting, by contrast, uses theories, propositions or correlations as starting points for open-ended, multiple narratives that build on context. They recognize that any story line may be confounded by events as so much of what determines outcomes is context dependent and outside of any theory, proposition or regularity. Associations, even weak ones, can serve as

[5] Bernstein et al., "God Gave Physics the Easy Problems."
[6] Levy, "Theory, Evidence, and Politics in the Evolution of Research Programs"; Goertz, "Descriptive–Causal Generalizations."
[7] Chernoff, *Power of International Theory*, pp. 152–65.
[8] Popper, *Open Society and Its Enemies*, p. 157, and *Poverty of Historicism*, pp. 43–5, 133.
[9] Suganami, *On the Causes of War*, p. 6.
[10] Lebow, *Why Nations Fight*.

the foundation for forecasts, but not of predictions. Many predictions are nevertheless possible. Claims that the euro will survive its latest crisis, that Iran is seeking a nuclear weapon capability, or that global warming will have profound climactic consequences may all be correct, but none of them are based on regularities.

In the absence of constant conjunctions, we cannot finesse the problem of cause. The important question becomes the kinds of thicker conceptions to which we should turn. One creative effort is Carl Hempel's deductive–nomological (DN) model that stipulates that an event (*explanandum*) can only be considered explained when it is the product of a deductive argument, whose premise (*explanans*) is a law-like statement and a set of initial or antecedent conditions.[11] The DN model is inappropriate to international relations for several reasons.[12] There are no law-like statements, and thus no covering laws to which associations can be subsumed. This is due in part to the absence of natural kinds in the social world. They are essential to generate the terms used by the DN model to make law-like statements. Even more than its Humean predecessor, the DN model directs attention away from explanation and to prediction.[13] Here, too, it provides a bad fit with international relations. Finally, DN allows causation to work backwards and forwards, but causal dependence has a definite direction, especially in the social world.[14]

Scientific or critical realism, made prominent by Roy Bhaskar and Rom Harré, is a more recent entry into the field. It rejects regularity and structural theories as inadequate given the open-ended, non-linear, and reflexive nature of the world. It also spurns "anything goes" approaches to politics that assume that behavior and its consequences are largely products of intersubjective understandings. Critical realism attempts to strike a balance between positivism and constructivism by positing a real world that is in part independent of how we conceive of it. The world is assumed to be structured, layered, open-ended, and characterized by emergent properties. It is difficult to disagree with critical realists that things like markets, societies, and states are more than social constructions because their effects are not always determined by what we think about them. It is quite something else to insist

[11] Hempel, "Logic of Functional Analysis."
[12] For a critique, see Suganami, *On the Causes of Wars*, pp. 116–28.
[13] Goodman, *Fact, Fiction and Forecast*, p. 21.
[14] Psillos, *Causation and Explanation*, p. 225.

that such entities are real and that causation is a feature of the world. At least one leading critical realist in international relations criticizes scholars who treat states, classes, nations, markets, and the balance of power as fixed structures independent of the rules and conventions that govern them.[15] If these entities have "causal powers" at the ontological level, we must turn to cultural understandings because they create, or at least significantly influence, the mechanisms by which any of these things have effects.

A more fundamental objection is the entities to which critical realists attribute causal powers. Many deny that they are natural kinds, but they attribute causal properties to them, which is close to the same thing.[16] Consider the balance of power. Its causal powers, to the extent they exist, depend entirely on the understandings actors have of the concept and the balance at any given moment. I think it more accurate to say that certain theorists and policymakers project causal powers onto the balance and may or may not make them self-fulfilling. Theories that treat the balance of power as an independent mechanism are part and parcel of a political project, not independent assessments of international relations. John Mearsheimer's theory is a notable example.

Our definitions of "balance" and "power," independent of any properties that we attribute to them, are subjective. Hans Morgenthau and Kenneth Waltz define power as a composite of material and political components that include such factors as territory, natural resources, geographic advantages, population, industrial capacity, military preparedness, and quality of leadership.[17] They provide no rules for weighting these components of power, although Waltz gives priority to military might. The subjective nature of the balance of power, military capability, polarity, or any other concept used in international relations, inevitably gives rise to different and incommensurate measurements. It is hardly surprising that prominent realists disagree among themselves about whether the post-Cold War world is uni-, bi-, or multi-polar. And the effects of power in international relations are

[15] Patomäki, "How to Tell Better Stories about World Politics."

[16] See Michel, "Pigs Can't Fly," for a telling critique of scientific realism in this respect; Kratochwil, "Evidence, Inference, and Truth," for the same regarding Wendt.

[17] Morgenthau, *Politics among Nations*, pp. 14, 105; Waltz, *Theory of International Politics*, pp. 131, 153, 180–1.

not independent of how actors conceive of it. The balance of power failed to prevent two world wars in the twentieth century and is largely alien to the international relations of East Asia. It must be considered a cultural artifact whose importance and consequences and norms vary across cultures and epochs. The same is true of markets.

As thoughtful critical realists acknowledge this variation, we must ask what is to be gained by insisting, as they do, that we treat balances and markets at the ontological level by assigning causal properties to them.[18] Given the variation in their effects due to subjective understandings and context, assigning ontological status to them tells us nothing in practice about their consequences for human behavior. The most graphic illustration of this problem may be human beings – about the only things in the social world that might conceivably be described as a natural kind with causal properties. People have the potential to engage in an enormous range of behavior. They act differently depending on circumstances. They are influenced by those with whom they interact, their level of emotional arousal, the arguments to which they are exposed and what they think they have learned from past experiences. To attribute inherent powers to people is no different from saying that they have a nature, and human nature has proven a notoriously slippery and unhelpful starting point for understanding individual or collective behavior.[19] The same holds true for markets, states, and the balance of power. We can only observe their effects in context as there is no way of determining any inherent powers they might possess. At best, such powers would only impose limits on what is possible.

Kantian causation assumes that cause is a feature of the world that can only be explained with reference to general laws that warrant inferences about cause and effect. It looks to noumenal worlds for these warrants and for abstract formulations that can be used to make sense of the empirical world. In physics, this approach has been used to construct the concepts of equilibrium and phase transition. Kantian causation is surprisingly common in international relations theory,

[18] Patomäki, *After International Relations*; Kurki, *Causation in International Relations*; Joseph and Wight, *Scientific Realism and International Relations*. Wendt, *Social Theory of International Politics*, p. 91, considers himself a fellow traveler.

[19] Jacobi and Freyberg-Inan, *Man, Agency and Beyond*, for a critical review of the concept.

although never acknowledged as such. Hedley Bull and Kenneth Waltz are Kantian in their creation of transcendental worlds from which they derive their theories.[20] Equilibria are Kantian as long as they are understood as something resembling ideal types, not descriptions of empirical worlds.

Kantian causation is problematic in international relations, as it is in the social world more generally. Equilibrium is not an empirical observation but a theoretical assumption.[21] In regional and international systems, unlike some of their physical counterparts, there is no demonstrable tendency toward equilibrium. In a recent and comprehensive study of the balance of power, Kaufman, Little, and Wohlforth draw on evidence across cultures and epochs to find that balanced and unbalanced distributions of power are about equal in frequency. Military expansion is "well-nigh universal behavior," but such aggrandizement is often tolerated by "myopic advantage-seeking" actors who pursue narrow short-term interests in preference to system maintenance.[22]

Of equal importance, balances of power are only likely to prevent general wars when key actors consciously use them for this end. Several highly regarded studies of the balance of power in Europe conclude that it was most effective in the eighteenth and nineteenth centuries. Hans Morgenthau attributes its success to the robust character of European transnational society, the skill of leaders, and their commitment to maintain regional stability.[23] Quincy Wight, Paul Schroeder, and Henry Kissinger all argue that group pressures to conform to norms and practices were even more effective in restraining key state actors.[24] Morgenthau makes a similar argument in *Politics among Nations*.[25] The fact that prominent realists turn to culture to explain when and why the balance of power works undercuts its claims to universality.

For Kant, causation is a necessity and, although a product of the human mind, is considered in accord with the structure of the world. This supposition finds little support in the physical or social worlds.

[20] Bull, *Anarchical Society*; Waltz, *Theory of International Politics*.
[21] Cartwright, *Dappled World*, pp. 137–51.
[22] Kaufman, Little, and Wohlforth, *Balance of Power in World History*, pp. 229–30.
[23] Gulick, *Europe's Classical Balance of Power*; Kissinger, *World Restored*; Schroeder, *Transformation of European Politics*.
[24] Wight, *Systems of States*, pp. 23, 149; Schroeder, "International Politics"; Kissinger, *World Restored*, p. 1.
[25] Morgenthau, *Politics among Nations*, p. 195.

Recognizing this lack of correspondence, Morgenthau, a close reader of German philosophy and sociology, treats the balance of power as more of a Weberian ideal type than a Kantian form, and one with normative as well as empirical implications. He describes it as a rational solution to anarchy, but not useful for making predictions. It is a starting point for narratives to explain why a favorable balance of power has or has not formed – as in the 1930s – and why it has or has not kept the peace. Formal theorists and others drawn to formulations like the balance of power often fail to frame their projects the way Morgenthau does and mistake ideal types for descriptions of the empirical world.[26]

Process theories represent another approach that has made inroads among international relations theorists. They offer a narrative logic for a reconstructing of the past, as evolution does in biology. Tragedy is a leading example, and one of the oldest conceptual frames of Western culture. A tragic plot, Aristotle tells us, must contain some great miscalculation or error of judgment (*hamartia*) by the protagonist. This miscalculation, usually attributable to hubris, sets in motion a chain of events that lead to a reversal of fortune (*peripeteia*) and ultimately recognition (*anagnorisis*) as the protagonist realizes his error and its consequences.[27] Hubris is a pathology most pronounced among the powerful, so an appropriate story line for international relations. Thucydides uses it to structure his account of the Peloponnesian War. A tragic vision of the world guides Carl von Clausewitz's theory of war, Hans Morgenthau's theory of international relations, as it does my *Cultural Theory of International Relations*.[28] It develops multiple story lines that I associate with different motives and their relative importance within policymaking elites and society. Tragedy can also arise from clashing ethical perspectives, the complexity and opacity of the international environment, and the need to make hard choices from among competing ethical demands. Each of these understandings generates plot lines applicable to international relations.[29]

I believe that the ontological and epistemological assumptions of process models are more useful than regularity theories in the study

[26] See Lebow, *Cultural Theory of International Relations*, chs. 2 and 3 for a discussion.
[27] Aristotle, *Poetics*, 1452a.
[28] Lebow, *Tragic Vision of Politics*; Erskine and Lebow, *Tragedy and International Relations*.
[29] Lu, "Tragedies and International Relations."

of international relations. They nevertheless fail to meet the condition of comprehensiveness. Tropes such as tragedy are not restricted to a particular society or epoch. However, they are only some of the story lines that can capture international relations. Nor is it evident which, if any of these narratives, is applicable; even in retrospect, as events can often be assimilated to competing narratives. Like Kantian noumenal worlds or Weberian ideal types, such tropes are best envisaged as starting points for context-dependent causal narratives.

Singular causation describes non-repetitive events that appear causal in nature but cannot be explained by regularities or laws. Such events do not generate new regularities or laws that can be used to explain future developments. Singular causation describes outcomes that are the result of local conditions and the sequence of events. They are best captured by causal narratives. Most major developments in international relations lend themselves to descriptions of this kind. There are compelling claims for the utility of singular causation. Many important developments in international relations are "one-offs," like the rise of the territorial state, the development of nuclear weapons, the European Union, and globalization. They are event types that involve multiple actors, thus allowing comparison. But many of these event types have small N's. One-off event types like the rise of the territorial state or the creation of divided nations at the beginning of the Cold War cannot be accounted for effectively by regularity approaches, making them candidates for singular causation.

Theorists invent categories like wars, military interventions, peace treaties, arms races, and trade agreements, and shoehorn events into them as "cases." The comparability and independence of these "cases" is often taken for granted. However, most events only assume meaning in context, and these contexts evolve rapidly. Even when conditions of independence and comparability can be met, sample sizes in international relations are often inadequate for meaningful statistical analysis. Systemic wars are a good example. I was able to identity nine systemic wars in the modern European state system (from the Franco-Dutch War of 1672–79 to World War II of 1939–45).[30] They were initiated and were fought under quite varying political and military conditions. Their origins and conduct alike was influenced by lessons that political and military officials thought they had learned from previous wars. Comparative analysis is possible, but we must be very careful about the

[30] Lebow, *Why Nations Fight*, pp. 117–21.

kinds of questions we ask and can only attempt to make the case for cause through careful process tracing.[31] Even here, we must acknowledge that the best we can do is make a plausible case for cause.

The most promising kinds of comparisons for event types with small samples are intra-case. Between 1911 and 1914, Austrian leaders debated intervention in Serbia on four separate occasions, but only went to war in the summer of 1914.[32] To understand why they went to war in 1914 and not before, we need to look at the contexts in which these four decisions were made. I attribute the Austrian ultimatum and subsequent declaration of war against Serbia, German backing for it, and Russian support for Serbia to a remarkable confluence. Three independent causal chains intersected in 1914 and their non-linear interaction made leaders in Vienna, St. Petersburg, and Berlin significantly more risk-prone than they had been even six months earlier. War initiation still required a catalyst, and that was provided by the assassinations at Sarajevo. They met six very special conditions that produced a coalition in favor of war in Austria and made the German Kaiser and chancellor willing to give Austria the infamous "blank check."[33] The contingency of the underlying and immediate causes of war indicates that August 1914 is best characterized by singular causation.

Of equal importance, this conflict developed in a particular historical context, an era of modernization that produced great political, economic, and social dislocations. It cannot be understood without taking this background into account. Historians have stressed such features as rampant nationalism, acute class conflict, uneven economic development within and among states, complex and poorly understood military command and control, and the appeal of ideas like Social Darwinism. Most of these putative causes were the products of modernization. I emphasize another feature: the different size of the middle class in European countries and different responses of the aristocracy to it. The most aggressive states – Germany and Austria–Hungary – had sizeable and growing middle classes and aristocracies that felt threatened by them and exercised a monopoly over foreign and military policy.[34]

[31] George and Bennett, *Case Studies and Theory Development in the Social Sciences*; Collier, Brady, and Seawright, "Outdated Views of Qualitative Methods"; Waldner, "Process Tracing and Causal Mechanisms."
[32] Lebow, *Forbidden Fruit*, ch. 3. [33] Ibid.
[34] Lebow, *Cultural Theory of International Relations*, ch. 7.

One of the key features of the social world is reflexivity, which means that people learn from past events, or think they do so. Learning deprives "cases" of their independence, as responses to current challenges are heavily conditioned by past events and their apparent lessons. A nice illustration is provided by the relationship between the two World Wars and the Cold War. The principal lesson of World War I for revisionists was that arms buildups and alliances provoked the continental war they were intended to prevent. This lesson provided the intellectual justification for the appeasement of Hitler, something that British and French leaders admittedly pursued for other reasons as well. The dominant lesson of World War II for American policymakers and scholars was that appeasement had whetted Hitler's appetite for further aggression and that deterrence could have stopped him had it been practiced forcefully and early enough. As Stalin and Khrushchev were regarded as Hitler's linear descendants, deterrence was considered the appropriate response to the Soviet Union.[35] There is ample evidence that from the 1950s on it intensified and prolonged the Cold War.[36]

Steven Bernstein, Janice Stein, Steve Weber, and I maintain that international relations are more like evolutionary biology than physics.[37] Evolution is the result of biological change and natural selection. The former is a function of genetic mutation and random mating. The latter depends on the nature and variety of changing ecological "niches" and competition for them. Niches in turn are shaped by such factors as continental drift, the varying output of the sun, changes in the earth's orbit, and local conditions that are hard to specify. Biologists recognize that all the primary causes of evolution are outside the theory of evolution and are either random, or interact in complex, non-linear ways, that make prediction impossible. Certain kinds of outcomes can be ruled out in a probabilistic sense, but almost never absolutely.

Darwinian theory, widely regarded as one of the seminal scientific advances of the modern era, challenges the belief, all too common in political science, that prediction is the principal, or even only, goal and test of a scientific theory. International relations is similar in the

[35] Lebow, "Generational Learning and Foreign Policy."
[36] Lebow and Stein, *We All Lost the Cold War*.
[37] Bernstein et al., "God Gave Physics the Easy Problems."

sense that events ranging from specific interactions between states to system transformations are generally the product of complex interactions among multiple agents and the events they set in motion. For all these reasons, policy decisions and their consequences, like evolution and its consequences, are generally impossible to predict and many are best treated as instances of singular causation.

Causal singularity suggests that we conceive of international relations as an historical science. This does not mean that international interactions are random. There are observable patterns; some events, processes, and outcomes are undeniably more likely in certain circumstances. Let us revisit Michael Scriven's example of singular causation: a bottle of ink on a desk that spills and stains a carpet. Not all ink bottles spill, not all ink spills overflow desks, and not all desks sit on carpets.[38] Any causal narrative that seeks to explain such an event must draw on general understandings, among them, the greater propensity of ink bottles with high centers of gravity to spill, that full ink bottles overflow desks more often than nearly empty ones, and that ink will more likely run off slanted than flat desks. Desks in the homes are more likely to be on carpets than those in offices, and the homes of rich people are more likely to have carpets. We can invoke at least two physical laws: fluid dynamics and gravity. Less viscous fluids like ink are more likely to spread across the surface of a desk and gravity guarantees that spilled ink will flow in a downward direction (i.e., toward the center of the earth). These understandings and laws provide the necessary framework for a causal narrative, but cannot by themselves account for what happened or why.

Similar principles apply to international events. Causal narratives about them must incorporate general understandings, of which we have many, although none of them take the form of laws or robust regularities. Consider the following phenomena: people organize themselves, or are incorporated, into political units; political units are frequently at odds; international conflict is generated by competing demands for scarce material or psychological goods (i.e., honor and standing); most international conflicts have territory as their focus; conflict is most likely between neighboring political units and cooperation most likely between units with common adversaries; conflict is most acute and least rule governed when regional or international

[38] Scriven, "Explanations, Predictions and Laws."

society is non-existent or not robust; destructive wars are likely to give rise to efforts to strengthen regional or international societies. Political and military leaders are also prone to believe that any future war will have the same causes as the previous one. These are all demonstrable patterns but cannot account for individual events. At best, they provide reasonable starting points for more elaborate explanations or forecasts. These narratives are most persuasive when they combine patterns with idiosyncratic features of context.

Critics of singular causation either deny that such a phenomenon exists or contend that singular causes can be captured by more general formulations. Heikki Patomäki, for one, argues that a mere description of a unique sequence begs the question of what causes these events and their overall outcome. He insists that Mackie's INUS definition of cause can account for unique sequences, their underlying causes, and relatively enduring patterns.[39] In a purely descriptive sense this is true. Mackie has given us a tool we can use to describe complex causal situations involving confluences of multiple mechanisms and processes and the behavior of agents. He would have us ask the extent to which any of these contributing factors are insufficient but non-redundant parts of conditions that are necessary but insufficient for the event in question. The problem is at the empirical level because answers to this question require prior knowledge of the conditions that are necessary and sufficient, and that in turn demands a deeper theoretical understanding of the causal nexus in question. Scriven's point, and mine, is that, absent such knowledge – invariably the case in international relations – the application of the INUS formulation may be a useful framework for organizing causal inquiries. But in and of itself, it tells us nothing of substantive value. It risks serving as a smokescreen for our inability to do anything more than construct narratives about outcomes of interest.

Constitution and cause

David Hume understood cause as a cognitive organizing principle. However, there is much that is important in the social world that does not lend itself to causal accounts. Constructivists offer constitution as

[39] Patomäki, "How to Tell Better Stories about World Politics," and email communication to author, 20 March 2012.

a prime example. By constitution they mean the processes by which actors and their societies are created and recognized. Constitution determines who acquires status, defined as a position in a network or stratified social unit, but also office or role in an association or community. It distinguishes legitimate from illegitimate agents, and says something about how both are expected to behave. Most constructivists give constitution priority over cause, because it creates the intersubjective framework in terms of which human behavior assumes meaning.

The constructivist paradigm is anchored in the tradition of *Verstehen*, developed by William Dilthey and his followers. It characterizes the social world as distinctive because the meaning of behavior depends on the understanding actors have of it. Constructivism is also influenced by phenomenologists who maintain that social science must proceed by reconstructing the meaning social acts have for those who perform them.[40] This meaning, according to Wittgenstein and Schutz, is embedded in local, linguistic conventions.[41] Some naturalists insist that constructivism should be envisaged as an alternative to rational-based understandings of behavior that seek to transcend specific events and assimilate them to general understandings. Peter Winch and Richard Rorty maintain that when outside observers impose their definitions on events, they obscure the motives and understandings of actors and make it impossible to understand their behavior.[42]

For constructivists, agent reasons are important because they place behavior within a framework of rules. Constructivists seek to subsume behavior to rules instead of laws. This approach is consistent with two ways of conceiving cause. The first, and simplest, defines it in terms of the reasons people have for behaving as they do and the explanations they offer for their actions. The second emphasizes the importance of social versus individual determinants of behavior. It follows that explanation takes the form of situating behavior in a rule-based context. Both understandings can be traced back to Dilthey, Croce, and Weber. At the outset of *Wirtschaft und Gesellschaft*, Weber observes that motivation must be understood by "placing the act in an intelligible and more inclusive context of meaning."[43]

[40] Guzzini, "Reconstruction of Constructivism in International Relations."
[41] Winch, *Idea of Social Science*, p. 45.
[42] Winch, "Understanding a Primitive Society"; Rorty, *Philosophy and the Mirror of Nature*, pp. 174, 331.
[43] Weber, *Economy and Society*, vol. II, p. 8; Winch, *Idea of Social Science*, p. xi.

Constructivists disagree among themselves about the relationship between constitution and cause. Alexander Wendt – arguably not a constructivist – insists that causation and constitution exist in parallel but separate universes.[44] Causal logic is about the why and how, and aspires to explain physical and social phenomena. Constructivism asks why and how something is possible. It attempts "to account for the properties of things by reference to the structures in which they exist." Constitutive arguments must be evaluated in terms of their conceptual or logical necessity, but never causally. This is a rather less nuanced formulation of a well-rehearsed distinction in the philosophy of science where a causal explanation is usually regarded as an account of how prior events and their organization and timing bring about a subsequent event. A constitutive explanation is said to invoke the character and organization of system components to account for its properties.[45] The two kinds of explanations are more closely related than Wendt would have us believe and can provide different accounts of the same effect. Ylikoski offers the example of glass. *How* glass became fragile is a causal question, and we look to the processes that make it this way for an answer. *What* makes glass fragile is a constitutive question, and we turn to the properties of its constitutive to find a satisfactory account.[46]

This division of labor is a sensible one on the surface, but it is wrong to think of it as any kind of strict binary. Maja Zehfuss, among other constructivists, argues that constitution is relevant to causal and constitutive questions.[47] Rogers Smith uses the term "generative causality" to describe the behavioral consequences of identity narratives.[48] They help shape the goals people choose and the means they think appropriate to them, and thus their behavior. Through these choices they influence outcomes. John Ruggie prefers "constitutive causality," which occurs whenever "antecedent conditions, events, or actions are 'significant' in producing or influencing an effect, result, or consequence." He wants to introduce into the language of cause such emotions as

[44] Wendt, "On Constitution and Causation in International Relations."
[45] For recent accounts, see Woodward, *Making Things Happen*; Ylikoski, "Idea of Contrastive Explanandum"; Northcott, "Partial Explanations in Social Science."
[46] Ylikoski, "Micro, Macro, and Mechanisms."
[47] Zehfuss, *Constructivism in International Relations*, p. 90.
[48] Smith, *Stories of Peoplehood*, pp. 46–8.

"hopes," "fear," and "desires" on the grounds that they are sources or forms of intentionality.[49] Nick Onuf makes a similar connection between intention and cause and stresses the extent to which intentions are constructed through intersubjective understandings.[50]

Fritz Kratochwil, another thick constructivist, emphasizes the role of desires and interests, but denies that they are causes. This requires "reasons," that serve as mechanisms that justify action. They have the potential to move systems out of homeostasis and to overcome obligations. Ideas, including reasons, are, however, never independent of their effects. He insists that this rules out traditional distinctions between causes and their effects.[51] Audie Klotz and Cecelia Lynch coin the term "conditional causality," which permits "context-dependent generalizations about behavior and language."[52] Drawing on Weber and McAdam, Tarrow and Tilly, Patrick Jackson makes the case for "adequate causality."[53] It attempts to bridge the divide between constitution and causality by focusing on "the contingent coming-together of processes and patterns of social action in such a way to generate outcomes."[54] Walter Carlsnaes and Heikki Patomäki, the latter an advocate of critical realism, also make the case for the causal powers of reasons.[55]

These definitions have diverse substantive and epistemological implications. Rogers Smith speaks specifically about identity narratives as a direct source of behavior. Other constructivists emphasize the linguistic and social context of identities and other forms of self-identification and association. Most constructivists appear to agree with Kratochwil that the behavioral consequences of identities are mediated by diverse processes and are accordingly context dependent.

How then should we think about the relationship between constitution and cause? I factor the causal problem into two separate and

[49] Ruggie, "Epistemology, Ontology, and the Study of International Regimes" and "Introduction."
[50] Onuf, *World of Our Making*, p. 49.
[51] Kratochwil, "Evidence, Inference, and Truth" and *Rules, Norms, and Decisions*, pp. 9, 25.
[52] Klotz and Lynch, *Strategies for Research in Constructivist International Relations*, pp. 14–16.
[53] McAdam, Tarrow, and Tilly, *Dynamics of Contention*; Jackson, *Civilizing the Enemy*.
[54] Jackson, *Civilizing the Enemy*, p. 43.
[55] Carlsnaes, "Analysing the Dynamics of Foreign Policy Change"; Patomäki, "How to Tell Better Stories about International Relations."

sequential steps. The first, rooted in the constructivist tradition, focuses on actors and the reasons for their behavior. The second is the aggregation of that behavior and the outcomes to which it leads. The two steps can be studied independently and by different methods. Actor behavior involves choice but within the constraints imposed by cognitive frames, emotional commitments, and context. In step two, actor behavior constitutes inputs, and we need to look elsewhere, mostly to mechanisms and processes, to understand the outcomes to which they lead.

This distinction is Kantian in origin, and was introduced by the Koenigsberg sage to acknowledge free will. It allows human beings to make choices, but their actions are always subject to causal laws. In this objective sphere, humans lose much of his freedom. In contrast to Kant, I reject the notion of causal laws, but understand aggregation as closer to a stochastic process. It nevertheless has the same effect in denying people control over the outcomes of their actions. This is an important recognition, and one that calls into question rational choice approaches that explain outcomes in terms of individual intentions. Contrary to the claims of such "intentional fundamentalists," reasons are not, as many claim, "the end of the story."[56]

Constitution is critical to the first step because identities (best understood as multiple self-identification) and their associated roles channel the thought and thus the behavior of actors. This is often evident in the reasons they offer for their actions, which are not infrequently couched in terms of these self-identifications, roles, and norms. In this connection, we must be careful to distinguish between reasons for behavior and reasons actors offer for their behavior as they are not always the same.

The second important conceptual issue that arises is the relationship between constitution and cognitive frames. Constructivists understand constitution as the process by which actors are recognized and named. Constitution is a source of identity, and, indirectly, of interests. The constitution of actors is closely associated with roles; performance of certain roles is often a precondition of recognition, and recognition in turn requires their performance. Roles come with rule packages,

[56] Boudon, "Social Mechanisms without Black Boxes"; Gambetta, "Concatenations of Mechanisms"; See Ylikoski, "Micro, Macro, Mechanisms," for the term "international fundamentalism."

Cognitive Frames → Identity → Interests → Goals → Behavior

Figure 2.1 Constitution and behavior

Behavior → Aggregation via processes and mechanisms → Outcomes

Figure 2.2 Behavior and outcomes

which are another source of behavior. Cognitive frames are neither a source nor form of constitution. Nor are they identities. They refer to the visual and intellectual frameworks that we use to organize the world and our relation to it. They are constitutive of identities, but can also be their product. Nationalism is a case in point. It rests on an understanding of the world in which group membership is seen as essential to personal security, economic advancement, and social integration. Nationalism in turn generates cognitive binaries and other expectations that significantly influence affiliations and behavior. Cognitive frames can be independent of identities, or constitutive of relatively unimportant self-identifications, as, say, a realist framework is for most scholars who use it to understand international relations. I choose to work with cognitive frames, not just identities, as they are a broader and more encompassing way of understanding reasons for behavior.

Figures 2.1 and 2.2 offer a flow diagram of causation. Figure 2.1 describes cognitive frames and their causal consequences. Cognitive frames can instantiate and sustain identities, and they in turn help to shape interests. Interests are a primary determinant of goals and behavior. The arrow of influence also flows in reverse. Psychological studies indicate that our behavior influences our choice of goals, formulation of interests, and through them, our self-understandings. This feedback can be reinforcing, or create dissonance that needs to be resolved, by changing how we act or reformulating our interests, self-understandings to make them consistent with our behavior. This process was first described by Thucydides, who highlights the role of language as the vehicle of change.

The flow diagram is more suggestive than comprehensive. Cognitive frames, as I noted at the outset, are not the only source of identity, interests, goals, and behavior. Each of these steps is subject to other

kinds of influences. I explore some of them in my case study of visual frames, the territorial state, and identity.

Figure 2.2 addresses the second stage of the causal nexus: aggregation. It starts from the recognition that politics consists of behavior, individual and collective, and that political outcomes are the result of the aggregation of that behavior. Processes and mechanism are the means by which behavior has effects. They take us away from individual actors to other levels of analysis and more holistic ways of studying behavior.

Actor behavior and outcomes can be studied separately, but they have interaction effects. Actors invariably reflect on outcomes of their behavior and the mechanisms and processes that appear responsible for them. Their reflection can prompt different behavior, reasons for behavior, as well as different goals and self-identifications. As aggregation is the product of the behavior of multiple actors, changes in their behavior can affect which mechanisms and processes come into play and how they function.

Inefficient cause

My concept of "inefficient cause" is a riff on Aristotle's category of efficient cause, which he conceives as the immediate source of change.[57] I follow Aristotle in thinking that efficient cause offers only partial and superficial insights into causation and must be supplemented by additional understandings. I do not find his other categories particularly helpful for the study of international relations. Material cause is best suited, as Aristotle understood, to tangible things. At a stretch, one might think of war being fashioned from such things as tanks, planes, guns, and command-and-control systems. However, this recognition tells us little beyond the important but widely recognized dependence of policies on specific physical and administrative capabilities. Aristotle thought in terms of organic analogies and analogized the rise and fall of political units to the birth, growth, and decay of living things. For the same reason, he was drawn to telos, as he understood growth and maturation as a process applicable to institutions, not just to living things. I reject the claim that politics or international relations are ineluctably moving toward some predetermined end. I see the future as open and

[57] Aristotle, *Physics* 7.1–2, 8.4–5; *Metaphysics*, 2.2.

accordingly reject the concept of telos. This in no way denies that agents act with purposes in mind.

Aristotle's concept of original cause requires an initial, unmoved, mover, which is problematic. It depends on a world structured in a way that makes it possible to trace back any outcome to some initial cause through a long link of anterior and connected causes. It further assumes that there is only one causal chain to trace back, when most outcomes appear to be the product of multiple causes associated with multiple chains. Rather than leading us back to some original cause, the backward tracing of cause is more likely to produce an ever-expanding network of preceding and enabling causes. The search for original cause is accordingly futile because no such beast exists, or if it does – say in the form of the big bang – it is so primal and all-encompassing that it tells us nothing meaningful about social action.

Aristotle is nevertheless correct in conceiving of efficient cause as inadequate. As we have seen, it is difficult to establish efficient cause in the absence of constant conjunctions, and there are none in international relations. Claims for efficient causes, moreover, are only likely to be persuasive when they include mechanisms that purport to explain how causes have their effects. This in turn requires a more general framing of the causal problem. This is also necessary because international events are rarely the product of one efficient cause and its associated mechanism.[58] More often, they appear to have multiple causes, each with its associated mechanisms and processes. The causal picture is further complicated by the presence of cognitive frames of reference that shape how actors understand themselves, their environment and formulate goals. We must go beyond efficient cause, but not in a linear manner as we would in a search for original cause. Rather, we should work back along multiple lines of causal inquiry, but we can only do this for a few steps as each step back opens additional causal lines of inquiry.

Inefficient causation is a multi-step process that involves searching for connections between and among causes at multiple levels of inquiry. We can begin with frames of reference and use process tracing to document their influence on processes, mechanisms, or agents. Or, we can start with events and their putative efficient causes and work

[58] Wendt, *Social Theory of International Relations*, p. 79; Kurki, "Causes of a Divided Discipline."

back through mechanisms and processes to cognitive frames of reference. Either way, our goal is to create a more holistic understanding of cause by drawing on frames of reference, processes, mechanisms, and other features of context (e.g., confluences, actor goals, and interactions) to understand how they may be responsible for particular outcomes. Inefficient cause heightens our sensitivity to multiple causes and causal chains and provides an analytical framework for studying them. It draws our attention to the possibility of causation across levels and social domains. The tacking back and forth between putative causes and their effects might lead us back, step by step, to deeper levels of possible causation. It has the potential to lead us forward again in an ever-widening, more comprehensive search for explanations. Our causal map will never be complete, but this is not necessary to develop a reasonable understanding of the most likely causes of an outcome of interest.

Constructing causal maps is nevertheless a difficult and uncertain project. Almost by definition, there is never adequate variation for us to evaluate the extent to which any one factor, or cluster of them, might be closely associated with a particular outcome or class of outcomes. At deeper levels of investigation – where we look for the causes of efficient causes or the conditions of context that enable them – we must rely on process tracing and intra-case comparison. In both, it is useful to introduce additional variation through the use of counterfactual thought experiments. Elsewhere, I have elaborated a method for doing this in a manner that attempts to control as far as possible the uncertainty inevitably associated with any counterfactual argument.[59]

So called "factual" and counterfactual arguments are usually necessary to construct persuasive causal maps. In the case of World War I, intra-case comparisons of the four occasions between 1911 and 1914 when Austria–Hungary considered war against Serbia made it possible to identify several distinguishing features of the 1914 case. As noted earlier, cross-country comparisons revealed a decisive shift in the willingness of Austrian, German, and Russian leaders to accept foreign policy risks as the result of three independent chains of causation that came into confluence in 1914. Willingness to take risks in turn rested on an underlying cultural gestalt: the importance of honor for continental aristocrats, especially in Central Europe, and

[59] Lebow, *Forbidden Fruit*.

close associations in their minds between personal and national or dynastic honor. When motivated by honor, in lieu of material interest or security, leaders everywhere in Europe were more willing to take risks because they considered compromise and concession dishonorable. This is an important reason why the crises of 1905, 1909, and 1911 were resolved, but not that of 1914. At a still deeper level, we can find reasons why the concern for honor was most pronounced in Central Europe. War nevertheless required a catalyst or mechanism that primed leaders even more than usual to frame foreign policy in terms of honor, which the assassinations at Sarajevo did. They also made it possible for the still somewhat cautious German leaders to convince themselves that the crisis they helped set in motion would not lead to a great power war, and, if it did, Russia rather than Germany would appear responsible. All these conditions were essential to winning socialist support for any war.[60]

Looking for multiple levels of causes suggests that at the most fundamental level, World War I was a consequence of the rapid modernization of Europe, beginning in the late eighteenth century and the political, economic, social, and intellectual changes and challenges it raised. For various reasons, they were most acute in Central Europe, where the bourgeoisie was sizeable and the aristocracy on the whole unremittingly hostile to it. The variation in aristocratic responses to the rising bourgeoisie, from accommodating to downright hostile, was attributable to distinctive features of the historical development of Britain, France, Germany, Austria–Hungary, and Russia.[61] Working forward, we can see how aristocratic emphasis on honor shaped foreign policy goals and risk-taking, but also how other processes mitigated or intensified this frame of reference. Together they account for national differences, and also those within the great powers in the decade leading up to 1914. Mechanisms and agency were also critical in 1914, and inefficient causation provides the means for us to bring them into the picture. A causal map of this kind also allows us to make more informed judgments about what 1914 had in common with and how it differed from other war-threatening situations.

It is possible – and necessary – to build different causal narratives for 1914, as there is no privileged perspective on the social world. As

[60] Ibid., ch. 3; Lebow, *Cultural Theory of International Relations*, ch. 7.
[61] Lebow, *Cultural Theory of International Relations*, ch. 7.

Max Weber stressed, observers do not stand outside the world but are participants in it. The explanations they find depend on where they are situated, the questions they ask and the methods they use. This variation encourages multiple causal narratives. They are bound to conflict in some ways but may overlap in others, even when they start from different assumptions. They provide a fuller picture of the causal nexus and enrich our understanding of an event or development. They help identify multiple pathways, mechanisms, and enabling conditions. This kind of inquiry requires the historian's art as much as it does the social scientist's conceptual rigor. It is a form of evaluation, not of testing.

Inefficient causation requires intellectual agility on the part of the researcher, as its methods can only be stipulated in general ways. As noted, working back from theorized efficient causes to deeper levels of causation quickly becomes an impossible task. It can be compared to looking ahead in a chess game. Players pick two or three possible moves and consider two or three replies to each. Given time constraints and limits on cognitive processing, it is impossible to consider two or three possible responses to each of these replies. Good players have an intuitive feel for the most promising lines of play, which they explore in more detail at the expense of others.

The other major conceptual problem concerns the connections between cognitive frames of reference and efficient causes, and between the latter and the processes and mechanisms that are often cited as efficient causes. They might be said to operate on parallel tracks, but ones with many cross-switches. Cognitive frames shape actor goals and understandings of the world. They do this directly when they influence behavior, and indirectly when actor understandings trigger or forestall processes and mechanisms. These forms of influence are interactive. Actor understandings help shape goals by suggesting which ones are feasible, and there is good evidence that actor goals and behavior shape actor understandings of themselves and their world.[62]

Cognitive frames are used by actors, and through them, institutions of all kinds. Institutions may be disposed to see the world in certain ways and prove resistant, even abusive, to people who challenge them. As the author knows first-hand from his service as a scholar-in-residence in the Central Intelligence Agency during the height of the

[62] See Lebow, *Between Peace and War*, chs. 5–6, for examples of motivated bias.

Cold War. Arguments, no matter how well documented, that National Intelligence Estimates exaggerated Soviet military and strategic capabilities, fell on deaf ears. By contrast, poorly documented allegations that Soviet capabilities were undervalued were taken seriously, and not just for political reasons. Cognitive frames, especially ones with important political implications, are invariably contested, and much of politics consists of efforts by actors to propagate and impose frames of reference conducive to their goals.[63]

Inefficient causation is no silver bullet. It is a form of singular causation that eschews definitive causal claims. At best, it strives to offer defensible and rhetorically appealing accounts of events. Its persuasiveness rests on its presentation of a complex causal picture in which various possible causes are identified and examined, and the most promising linked to outcomes via mechanisms and processes. It folds in agency through actor goals and cognitive frames, thereby providing more realistic accounts of political behavior than theories (e.g., balance of power, power transition) and strategic action models that deprive them of any real agency by treating them as passive conveyers of forces or predictable responders to external constraints and opportunities.

Inefficient causation has the virtue of finessing important drawbacks of neopositivist understandings of causation. It makes no claims about any hypothesized cause being necessary and sufficient. If posits no "X" as responsible for any "Y." In its strongest form, it hypothesizes a necessary but insufficient condition for a given outcome or set of outcomes. Weaker forms of causal claims offer "possible" but insufficient conditions. Both formulations start from the premise that conceptual frames of reference determine how actors understand themselves and others and make sense of the social world. Inefficient causation directs our attention to these frames, but in full recognition that institutions, social processes, and various kinds of interactions mediate between them and behavior. Inefficient causation accordingly seeks layered narrative accounts of human behavior in lieu of law-like statements. It rejects the latter, not only because of all the philosophical and methodological problems associated with such a project, but in recognition that outcomes – and their meanings – are always context dependent.

[63] Lebow, Kansteiner, and Fogu, *Politics of Memory in Postwar Europe*, for examples.

Earlier, I argued that singular causation is the most relevant formulation of cause to international relations. It requires us to construct historical narratives unique to the outcomes we want to explain. It differs from history in that it is embedded in more conceptual understandings of how the political, economic, and social worlds work. These understandings must be made explicit and their implications for the outcome in question spelled out. Singular cause, I noted, also differs from history in its goal of going beyond explanation to reflect back on the general understandings used to underpin it with the goal of evaluating them and revising them to make them more suitable as conceptual starting points for narratives that take the form of forecasts.

Patrick Jackson warns against running together substantive and methodological questions and claims. I agree that it is useful to distinguish between them and to justify both, as neither necessarily follows from the other. My principal substantive claims are nominalist; I regard cause as artifice and emphasize reflexivity, and thus the need to understand behavior in terms of actor perspectives. For these reasons, I embrace what Jackson describes as the analytical tradition. Inefficient causation relies on two kinds of narratives: those of actors and those of analysts. Actor narratives are about the self, other actors and employ diverse psychological and cultural frames of reference. They can be oral, written, or merely imagined. Analytical narratives are imposed from the outside. In Chapter 4, I offer a causal narrative about the rise of the territorial state. The two forms of narrative often overlap as researchers attempt to reconstruct actor narratives on the basis of their statements and behavior. This is an accepted method in history and anthropology.

Actor narratives are substantive features of context and the raw material of analytical narratives. Mechanisms and processes, by contrast, are configurations invented by researchers to impose causal narratives on events. Actors also construct causal narratives, and here, too, we must distinguish their accounts from those of researchers. Narratives of both kinds are never purely analytical, as they have the potential to influence behavior. Even when they address the past they create expectations about the future that help shape the context in terms of which people think and act. There is good reason to believe that post-1945 realist accounts of international relations were influential in shaping the mindset of people who became policymakers in many countries, and during the Cold War made some of its expectations

in part self-fulfilling. Actor and researcher narratives often emphasize different causes, as actors routinely emphasize agency while at the same time downplaying contingency.[64] In reconstructing the end of the Cold War, Richard Herrmann and I interviewed some forty high-level Soviet, American, and European policymakers, all of whom insisted that the Cold War had to end when and how it did but insisted that any turning point of that conflict in which they played a role was actor dependent. When confronted with this contradiction, most struggled, without notable success, to reconcile these clashing assertions. For this reason and others, actor narratives are often useful, but never substitutes for the analytical narratives created by researchers.

[64] See Lebow, *Forbidden Fruit*, chs. 1, 3, 5–6 on this point.

3 *Inefficient causation II*

There is no chain of causation consisting of determinate links ranged in order of proximity to the effect. They are rather mutually interwoven with themselves and the effect, as the meshes of a net are interwoven. As the existence of each adjoining mesh of the net is necessary for the existence of any particular mesh, so the presence of each and every surrounding circumstance, which, taken by itself we may call a cause, is necessary for the production of the effect.

Nicholas St. John Green (1870)[1]

Inefficient causation is constructivist in its stress on frames of reference. They in turn embrace visual and cognitive schemas, discourses, identities, belief systems, analogies, and metaphors. Collectively, they shape actor views of the world, their definition of goals and problems, the information they pay attention to, and behavior they consider appropriate. Frames of reference have causal consequences in two different ways. They influence beliefs and behavior, and through them have the potential to transform the rules and norms that govern behavior and sustain, transform, or undermine orders. In this chapter, I explore the nature of these frames and some of the ways in which they have consequences.

At the outset, I want to make clear that I neither treat frames of reference as constants, nor give them ontological priority. They are critical to understanding human behavior, but are in turn shaped by socialization, experience, and reflection. They help dictate interests, practices, and behavior, but are also their product. Frames of reference provide reasons for acting, but also for justifications for behavior. They can be used unreflexively and consciously for both ends.

[1] Green, "Proximate and Remote Cause."

Emotions also motivate people. The role of anger and fear in affecting key foreign policy decisions is well documented.[2] In more subtle ways, emotions interact with frames of reference and help determine which of them will be activated. Emotions, as Aristotle recognized, are mediated by cognition. Different cognitive frames arouse different emotions in response to the same stimuli.[3] Recent work in neuroscience indicates that emotions play a positive role in cognition in helping determine the sensory inputs to which we give attention or priority and also how we interpret them.[4]

Neither reasons nor emotions can account for the consequences of behavior. In politics and international relations, outcomes are the result of the decisions and actions of multiple agents. Not infrequently, these outcomes are different from, even diametrically opposed to, those envisaged by these actors. Sophocles was among the first to explore this phenomenon in his account of Oedipus, who confirms his fate through a series of actions intended to avert it.[5] The aggregation problem is well known in social science and rightly attributed to the opacity and complexity of the social environment.

Mechanism and processes are central to both stages of the causal problem. They mediate between frames of reference and definitions of interest, and between them and behavior. We also invoke them to understand aggregation and the outcomes to which it leads. I devote the final section of this chapter to mechanisms and processes and attempt to free them from the constraints positivists and rationalists attempt to impose.

Frames of reference

Cognitive frames of reference enable and guide human behavior. They show enormous variation in their nature and power. It is useful to situate them along a continuum. At the deepest level of causation we find frames responsible for the meta-understandings we use to make sense of the world. These include visual as well as

[2] Clore, "Cognitive Phenomenology" and Clore et al., "Affective Feelings as Feedback"; Gray, *Psychology of Fear and Stress*; McDermott, "Feeling of Rationality"; Lebow, "Reasons and Affect."
[3] Lebow, *Cultural Theory of International Relations* and *Why Nations Fight*.
[4] See Lebow, "Reasons and Affect," for an overview.
[5] Erskine and Lebow, *Tragedy and International Relations*.

conceptual frames of reference, for, as Kant observed, our conceptions of space provide "regulative ideals" that we use to generate concepts.[6] These frames establish categories of things and actions and are prior to analytical and normative concepts. They make some of these concepts very likely and others almost inconceivable. Toward the middle of the continuum we find frames of reference that are constitutive and regulative. They constitute actors and shape their behavior by stipulating what is permissible and legitimate and what is not. They make certain actions more or less likely. At the low end of the continuum are frames that are not as deeply held and more limited in their behavioral implications. They often begin life as conscious inventions, as analogies and metaphors used to sell or justify policies.

Visual frames generally anchor the far end of the continuum. Linear perspective has socialized Westerners to understand two-dimensional representations as capturing a third dimension by reference to a single vanishing point. Confronted with woodcuts by Escher that violate these expectations (see Figure 3.1) we become confused and disoriented and struggle to remake the image in our minds to make it consistent with our understanding of three-dimensional space. Such a transformation is, of course, impossible, compelling us to give up the quest or orient ourselves on a micro scale by aligning ourselves into one of the many possible spatial perspectives and limiting our gaze to that part of the woodcut consistent with it.

If the same image could be shown to a Medieval European, it might not evoke the same disorientation or cognitive–visual responses. Premodern visual conventions allowed objects to be depicted simultaneously from multiple perspectives with individuals sized as a function of their relative importance. This encouraged the viewer to develop a more holistic appreciation of them.

What is visually accessible and seemingly natural for one culture or epoch may be all but unimaginable and deeply problematic for another, artists like Escher aside. This effect can be just as strong for cultural frames of reference. Amazonian villagers are generally delighted to meet foreigners and learn about their lives. One of the first questions they routinely ask is "What River do you live along?" They find it difficult to grasp that one could live far from a river and that life is not

[6] Kant, *On the Form and Principles of the Sensible and Intelligent Worlds*, §4, 2:293 and §76, 5:404.

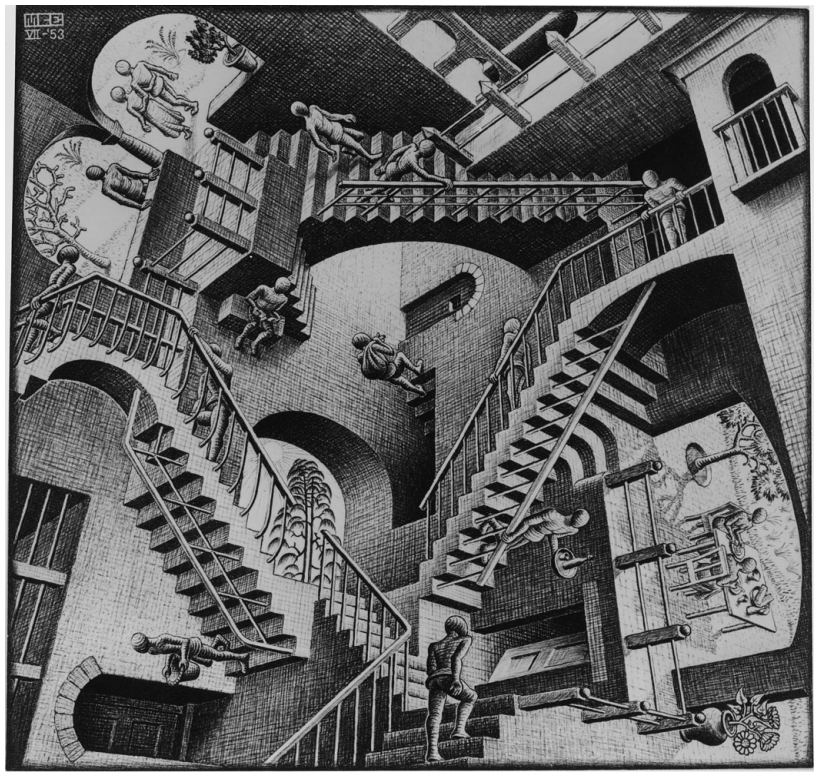


Figure 3.1 *Relativity*, by M. C. Escher (1953)

always constructed in relation to one. We do not have to look hard to find cognitive constraints in our own culture.

Strong inefficient causality works indirectly and at considerable remove. Cognitive frameworks of this kind shape the way people formulate goals and choose means of achieving them. They determine the kind of information people pay attention to and how they interpret it. To make the case for a causal connection between behavior and frameworks, we must show how actor goals and understandings are the product of particular frames of reference. Ideally, we would like to demonstrate that the behavior in question was inconsistent with other frames, or only consistent with those central to the actors in question. This is, of course, very difficult to do because much behavior is consistent with multiple frames. It is difficult to attribute it to any particular one in the absence of additional ways of distinguishing among them.

The best we can usually do is to make the case – as constructivists do with identities – that it offers a plausible account of the behavior we seek to explain.

Frames that make some behavior more likely and other actions less so are situated in the middle range of the continuum. Many social and political identities are located here. Self-identification as an aristocrat and officer in 1914 – the two went together in Central Europe – made it extremely likely that foreign policy questions would be framed in terms of honor, and that generals and policymakers who did this would seek "satisfaction," even at the expense of security and material interests. Alternative responses, like turning the other cheek, bargaining and compromise, that advance the goals of survival or wealth, were regarded as dishonorable and shameful. Honor, like all concepts, is elastic and underwent a substantial evolution in Western Europe during the course of the nineteenth century. Aristocrats and officers in France and Britain had more leeway to make accommodations with the modern world and could act more cautiously when confronted with personal and political challenges, or more decisively when presented with economic opportunities, without being dishonored in their eyes or those of their peers. Their responses to political and economic questions of a personal or national nature were accordingly more idiosyncratic, context dependent, and that much less predictable.[7]

Mid-level frames make some practices more or less likely. In *Why Nations Fight* I explore the implications of different conceptions of wealth for war making. Wars over trade and markets were not uncommon in the eighteenth century, but all but disappeared among the great powers in the next century. Until the writings of Smith, Ricardo and modern economics, the world's wealth was thought to be finite, making interstate relations resemble a zero-sum game in which an increase in wealth for any state was believed to come at the expense of others. Once political elites learned that the division of labor could augment wealth, as could mechanical sources of energy and economies of scale, international economic cooperation became feasible and ultimately understood as an important means of generating wealth. Trade and investment, and the economic interdependence to which they led, did not prevent war, as many nineteenth- and early twentieth-century liberals hoped, but they did more or less put an end to wars of material

[7] Lebow, *Cultural Theory of International Relations*, ch. 7.

aggrandizement among the great powers. This frame of reference does not tell us much about the conditions under which states will fight individual wars, but it tells us a lot about the frequency of wars associated with material causes. I contend that similar waves of learning have affected standing and security as motives for war, reducing the likelihood of both as motives for great-power wars.[8]

Mid-level frames of reference are less determining than their deeper counterparts. They are less entrenched and often in competition with other frames of reference, sometimes with respect to the same set of issues or problems. For this reason, context is all-important. It determines which frames of reference actors adopt, or which ones other actors can prime them to emphasize. Because there are multiple mid-level frames, scholars can disagree about which ones apply, or which ones to impute to other actors. Soviet President Mikhail Gorbachev's foreign policy offers a nice illustration. At the time, many analysts and European leaders welcomed his openness and apparent willingness to seek accommodation with the West. Traditional Cold Warriors in the White House, Pentagon, and academe assumed that he was no different from his predecessors and sought to analyze his foreign policy in terms of what they understood as long-term Soviet and Communist goals. They considered Gorbachev a particularly dangerous leader out to mislead the West by cultivating the appearance of compromise. In the aftermath of the Cold War, influential realists read Gorbachev's policy of accommodation as an unsuccessful attempt to get the best deal the Soviet Union could as its power declined relative to the West.[9] Other scholars stressed the revolution in Gorbachev's thinking and how he and his advisers sought to end the Cold War and integrate the Soviet Union into the Western community of nations in the hope of providing a better life for the Soviet people.[10] These competing interpretations were anchored in different cognitive schemas about the Soviet Union.

At the low end of the continuum we encounter frames of reference that are used primarily as rhetorical devices to sell or justify behavior or policies. In March 1941, Franklin Roosevelt successfully

[8] Lebow, *Why Nations Fight*, chs. 1, 4, and 5.
[9] Brooks and Wohlforth, "From Old Thinking to New Thinking in Qualitative Research"; Wohlforth, "Ideology and the Cold War."
[10] English, *Russia and the Idea of the West*; Lévesque, *Enigma of 1989*; Herrmann and Lebow, *Ending the Cold War*.

encouraged Americans to frame the problem of war in Europe as a fire in their neighborhood and how they would not think twice about lending a next door neighbor a hose to put out the fire in his house before the flames spread to theirs.[11] Patrick Jackson offers "Western civilization" as another rhetorical construct and shows how it was used by a transatlantic alliance of Germans and Americans to justify certain policies toward postwar Germany. Once entrenched, it made other courses of action increasingly less appealing and even unacceptable.[12] Sovereignty is a frame of reference that has been extensively studied. It is a concept with diverse, even murky origins that was first popularized in the sixteenth century. At that time, more importance was placed on its domestic than its international implications. Nineteenth- and twentieth-century jurists and historians, many of them Germans influenced by Kant and Hegel (e.g., Heeren, Clausewitz, Ranke, Treitschke) developed a narrative about sovereignty to legitimize the accumulation of power of central governments. The ideology of sovereignty neatly divided actors from one another, and made the binary of "us" and "others" appear an inevitable, if not progressive, development, as did rule-based warfare among states.[13] In these several examples, cognitive entrepreneurs successfully connected more superficial frames of references to deeper ones by the use of metaphor, historical examples, and arguments.

The relationship between constitution and causation is reciprocal and fluid. Visual frames of reference, identities, concepts, analogies, and metaphors begin life as conscious inventions of actors deployed to mobilize support for diverse projects. Success, as with linear perspective or sovereignty, increases the availability and attractiveness of a frame of reference, enhancing its reach and power. Over time, it may progress from a consciously invoked and controversial frame of reference – as say the "War on Terror" was in the Bush administration – to a middle-range frame that even opponents may need to use to advance their projects. Some frames of reference progress up the continuum

[11] Franklin D. Roosevelt, Speech of March 11, 1941, Franklin Roosevelt Presidential Library, http://docs.fdrlibrary.marist.edu/odlendls.html.

[12] Jackson, *Civilizing the Enemy*.

[13] Kant, *Idea for a Universal History*, pp. 44–7; *Perpetual Peace*, p. 112; Bartelson, *Genealogy of Sovereignty*, pp. 220–9; Sander, "Sovereignty, International Relations, and the Westphalian Myth"; Schmidt, *Political Discourse of Anarchy*, on these developments more generally.

until they are accepted as something natural. Actors are then likely to define themselves and their projects in terms of them. Much of politics consists of efforts to create or deploy frames of reference to make actors and their policies more appealing, or to portray these actors and projects as instantiating – or threatening to – well-entrenched frames of reference.

Deep frames of reference are the most important and also the most difficult to document. They are taken for granted and neither theorized nor debated nor consciously acknowledged. They accordingly leave fewer overt traces, making it necessary to devise clever strategies to detect their consequences, if not their existence. As we move from deep frameworks to social processes and interaction, a wide range of mechanisms are applicable and visible. At each step of the way, from frames of reference through social processes and interactions to behavioral outcomes, we need to specify appropriate mechanisms and processes linking these steps and search for supporting evidence.

In many circumstances, reasons can convincingly be characterized as causes or mechanisms. In 1914, the Kaiser's infamous "blank check" was the mechanism for communicating unconditional German support for Austria. It is best explained with reference to Wilhelm's framing of the Austro-Serb confrontation as a duel in which his proper role was that of a "second" to Franz Josef. At a deeper level, the Kaiser's identity, which led him to frame his role this way, was very much shaped by the honor culture in which Austrian, German, and Russian leaders were enmeshed. It drove their competition – which had little to do with security – and made it likely that Austrian leaders would see war as the only satisfactory response to the assassinations at Sarajevo. This cognitive frame was one of the most important underlying causes of war. If other frames of reference had been equally accessible and acceptable, leaders might have framed Sarajevo in terms of security or material being, and different policies would almost certainly have resulted.[14]

Like all hypothesized causes, reasons are difficult to document. For a start, they must be distinguished from rationalizations that leaders offer at the time or later to explain their behavior. Even when documents are available, it is generally difficult to determine why leaders acted as they did. In canvassing support for a secret missile deployment

[14] Lebow, *Cultural Theory of War*, ch. 7, on this case.

in Cuba in the spring of 1962, Soviet Premier Nikita S. Khrushchev gave different reasons to senior diplomats, military men, and his political advisers, in effect, telling each constituency what he thought they most wanted to hear. Khrushchev may not have known which of these motives – and the additional one of revenge for the American missile deployment in Turkey – was paramount for him.[15] At best, scholars must infer reasons from context and the past behavior of actors. They cannot be deduced from outcomes as political decisions are notorious for having consequences different from those imagined at the time. Reasons have to be reconstructed independently and analyzed as causes in conjunction with other causes, mechanisms, and processes.

One way to determine where along the continuum a particular frame is situated is by studying how actors couch their appeals. Do they attempt to sell the frames (low end), appeal to them (middle end), or make no reference to them but routinely act and speak in terms of them (high end)?[16] Over time, some frames of reference become so deeply entrenched that it is increasingly difficult, if not impossible, for many actors to imagine alternatives. If they can, they may find it difficult to consider functioning in terms of them. Linear perspective, sexual identities, and some religious and national identifications are among the most powerful deep cognitive frames.

Early recognition of the causal implications of visual frames is found in Erwin Panofsky's exploration of linear perspective in the 1920s. Drawing on the work of his Warburg Library colleague Ernst Cassirer on the autonomy of symbols and Alois Riegl's concept of *Weltanschauungsphilosophie*, Panofsky rejected Kant's contention that linear perspective was a feature of the human mind. He argued that each historical epoch of Western civilization had developed its own "perspective." Each of them was consonant with and helped to negotiate a particular *Weltanschauung*. Linear perspective should not be considered a scientific advance over medieval representations of space; it came no closer than earlier perspectives in capturing reality. What it

[15] Lebow and Stein, *We All Lost the Cold War*, chs. 2–3.

[16] Constitution can work in reverse. Frames of reference that were once taken for granted can lose their hold. This has happened to the Christian identities in Europe, which were once primary for most people. More recently, there has been a remarkable postwar transformation of German identity and with it, moderating and augmenting with supranational identification as "Europeans" (Berger, *Search for Normality*; Müller, *Another Country*).

did was to express more effectively the worldview of Renaissance Italians. Panofsky believed in the organic integrity of culture, but made no attempt to describe the particular cultural configurations that he alleges gave rise to the different understandings of space he attributes to ancient Greece, medieval Europe, and the Renaissance.[17]

Panofsky's ideas met with great resistance, even incredulity, among art historians and scientists. Since Kant, linearity had widely been regarded as a natural intuition that made it possible to understand the world in terms of causality. It may also have reflected the general reluctance of even intelligent and sophisticated people to recognize the extent to which their understandings of the world are limited and parochial.[18] Panofsky's insight that linear perspective is above all a convention no longer seems so radical, as it parallels similar moves toward constructivism in anthropology, philosophy, and political science. Contemporary scholars understand linear perspective as embedded in a cultural discourse and generally accept Panofsky's conclusion that the eye should not receive ontological priority when studying perspective, or perception more generally.[19]

Given Panofsky's pioneering work, linear perspective is a particularly useful frame of reference in which to explore the causal consequences of frames of reference. It qualifies as a deep frame that should have consequences across diverse social domains. In the next chapter's case study, I examine its consequences for changes in visual representation for political thinking. I see them as an important catalyst of the project of the territorial state.

Mechanisms and processes

"Thick" accounts of causation have been driven by two concerns. First is the difficulty "thin" accounts have of distinguishing meaningful associations from spurious associations and from mere conventions (e.g., Monday night always precedes Tuesday morning). Second is the

[17] Panofsky, *Perspective as Symbolic Form*; Wood, "Introduction".
[18] Edgerton, *Renaissance Rediscovery of Linear Perspective*, pp. 157–61.
[19] Elkins, *Poetics of Perspective*; Baltrušaitis, *Anamorphoses ou Thaumaturgus opticus*; Carpo, *Architecture in the Age of Printing* understand perspective as a different kind of imagined world than mathematics. Damisch, *Origin of Perspective*, analyzes perspective in terms of semiotics. Massey, *Picturing Space, Displacing Bodies*, bridges these works and analyzes perspective in terms of both artistic and mathematical traditions.

widespread belief that "thin" accounts are inadequate because association is not the same thing as cause.[20] Both concerns encouraged a search for deeper regularities, which prompted the DN model, and, more recently, a turn to mechanisms.[21] Mechanism-based approaches have become increasingly widespread in biology and the social sciences. In the latter, they have frequently been employed to critique thin approaches to causation. In the former, they have provided the foundation for descriptive accounts of biological phenomena and processes.[22] One philosopher of science insists that the discovery of a mechanism has become "the gold standard for establishing and explaining causal connections."[23]

Some rationalists regard mechanisms as the solution to the problems encountered by regularity approaches.[24] Kiser and Hechter concede that a "complete explanation must specify a mechanism that describes the process by which one variable influences the other, in other words, how it is that X produces Y."[25] Positivists nevertheless embrace mechanisms in a half-hearted way. Many quantitative researchers conceive of them as nothing more than intervening variables in a framework of correlational analysis.[26] They aspire to account for imperfect macro correlations by means of multiple micro correlations.[27] Typical of this approach is a recent article that defines a causal mechanism "as a *process* in which a causal variable of interest, i.e., a treatment variable, influences an outcome." The authors develop an algorithm for estimating causal mediation effects applicable to a statistical model.[28] They introduce several links in their causal chains, but do not in any way expand their approach to causation.[29] Reducing mechanisms to

[20] Coleman, *Foundations of Social Theory*.
[21] Salmon, "Four Decades of Scientific Explanation."
[22] Harré, *Principles of Scientific Thinking*; Elster, *Nuts and Bolts for the Social Scientists* and *Explaining Social Behavior*; Little, *Varieties of Social Explanation*; Hedström and Swedberg, in the social sciences. In biology, Bechtel and Abrahamsen, "Explanation," Bechtel, *Mental Mechanism*; Carver, *Explaining the Brain*; Darden, *Reasoning in Biological Discoveries*; Wimsatt, *Re-Engineering Philosophy for Limited Beings*.
[23] Glennan, "Mechanisms"; also Brady and Collier, *Rethinking Social Inquiry*.
[24] Collier, *Critical Realism*.
[25] Kiser and Hechter, "Role of General Theory in Comparative–Historical Sociology."
[26] Gering, "Review Article." [27] Mahoney, "Beyond Correlational Analysis."
[28] Imai et al., "Unpacking the Black Box of Causality."
[29] George and Bennett, *Case Studies and Theory Development*, ch. 3.

variables ignores their specificity.[30] It excludes mechanisms that cannot be observed and those that cannot be coded in binary terms.

Jon Elster's work on mechanisms illustrates these several problems. He acknowledges that law-like statements about social affairs are hard to come by, and his dissatisfaction with the imperfect correlations researchers find led him to mechanisms. He hypothesizes that mechanisms often come in pairs that can promote diametrically opposed behavior. By discovering the conditions in which one or another mechanism operates, we might discover robust underlying regularities. He acknowledges difficulties with this approach, including the possibility, even the likelihood, that paired mechanisms are triggered by the same conditions.[31]

Elster offers the example of how lovers respond to the breakup of their relationship. He posits two competing mechanisms at work. To reduce the pain of separation, a spurned lover can resort to the "sour grapes" mechanism and redefine their "ex" as a less attractive and less desirable person. However, this makes it difficult to enjoy good memories of the former relationship and leads the disenchanted partner to wonder why the attraction developed in the first place. He or she now feels foolish for having fallen for their "ex." To overcome resulting self-doubts, they must upgrade the former partner by means of the "endowment effect." But this only heightens the grief of separation. Elster suggests that invocation of these different mechanisms is sequential but their order depends on the personalities of the people involved. It seems self-evident that a preference for either mechanism will be influenced by a host of other factors, including the duration and prior importance of the relationship; the effects of the breakup on their lodging, job, circle of friends or family; the perceived prospect of finding a new lover; and what else is going on in their lives. Each of these "variables" will in turn be affected by other contextual factors. We must accordingly push our inquiry to a still deeper level of analysis. This will not resolve the search for cause because we are almost certain to encounter the same problem here, giving rise to the infinite regress Elster wants to avoid.

It is hardly surprising that rationalists either recoil from mechanisms or are attracted to them but want to formulate them in the narrowest possible way. They confront an unresolvable dilemma. All

[30] Guzzini, *Geopolitics Redux?*, ch. 11. [31] Elster, "A Plea for Mechanisms."

"thin" accounts of causation ultimately rely on constant conjunctions. In their absence, researchers must, of necessity, go to beyond association to "thicker" understandings of cause to account for observable variation. One solution – that advocated by Elster – is to find underlying regularities to explain initially observed regularities, thus maintaining the commitment to a "thin" formulation of causation. The problem with this approach, as both Russell and Wittgenstein observed, is that it only pushes the problem of cause to deeper ontological levels as second-level regularities are also imperfect and require explanation.

John Gerring, a committed rationalist, questions the overall utility of mechanisms given widespread confusion over what they are, the problems inherent in their specification and the even greater difficulties of testing them. He worries – as indeed he should – that the search for mechanisms is open-ended because there are always additional ways in which an X might influence a Y.[32] Positivists feel the need to open Pandora's box, but only briefly, and most do not like what they find when they stand on their tippy toes for a quick peek inside.

The concept of mechanism is closely associated with machines and commonly refers to the parts that make them perform the tasks for which they are designed. Machines can be taken apart and reassembled and their parts are assumed to fit together and work according to laws. Machines have been used as metaphors to describe the universe, the body, and government; Enlightenment philosophers commonly analogize the universe to a clock.[33] There is a mechanical school of causation in philosophy that attempts to understand the world as a machine.[34] According to Stuart Glennan, a leading proponent: "A mechanism underlying a behavior is a complex system which produces that behavior by the interaction of a number of parts according to direct causal laws."[35] Critics insist that this approach begs the question of how and why such mechanisms work and come to be in place.

There are a few machines in politics. Elections and electoral systems may qualify as they are designed to perform specific tasks and often

[32] Gerring, "Causal Mechanisms."
[33] Deutsch, *Nerves of Government*, pp. 26–30.
[34] Glennan, "Mechanisms and the Nature of Causation"; Bechtel and Abramhansen, "Explanation"; Machamer, "Activities and Causation"; Carver, *Explaining the Brain*.
[35] Glennan, "Mechanisms"; Ylikoski, "Micro, Macro, and Mechanisms."

do so admirably. Most political behavior is not machine-like, and the metaphor becomes more difficult to apply when we consider how machines work. Occasionally, they rely on a single mechanism, but complicated machines depend on multiple mechanisms. Consider the piano. Pressing a key causes a felt-tipped hammer to strike steel strings. The hammer rebounds, allowing the strings to continue vibrating at their resonant frequency. These vibrations are transmitted via a bridge to a sounding board that efficiently transfers acoustic energy to the air, amplifying the sound in the process. When the key is released, a damper stops the strings' vibration. Alternatively, pressing on the pedals prolongs these vibrations. Several mechanisms – keys, strings, pedals, and sounding board – combine in sequence to produce the sounds we call music. From another level, we can view the piano itself as a mechanism that contributes sounds to those produced by an orchestra performing, say, a piano concerto.

In other machines, mechanisms must work simultaneously. Airplanes have complex propulsion systems, but also those that balance and protect fuel and supply it to the engines, regulate velocity, direction of flight along three axes, trim regulatory controls, raise and lower landing gear, provide navigation, communication, sound necessary warnings, control cabin air pressure, and supply inside and outside lighting. The same kind of complexity is found in social systems, although their organizations are rarely designed and hardly ever machine-like in operation. One kind of comparison is nevertheless valid: the mechanisms of pianos and planes must be understood holistically to make sense of how they work and for what purposes, and so too must political mechanisms. Any mechanism must be put into a broader context to understand what function it performs and when it does so successfully. As Aristotle reminds us, every whole is a part in a larger whole.

For social scientists, most mechanisms have figurative meanings at best. This is apparent in Jon Elster's widely used definition of mechanisms as "frequently occurring and easily recognized causal patterns that are triggered under generally unknown conditions or with indeterminate consequences."[36] This definition is surprisingly imprecise, as Stefano Guzzini notes, because it says nothing about the level of generality at which mechanisms operate, or about their specification and

[36] Elster, "A Plea for Mechanisms" and *Explaining Social Behavior*, p. 36.

determinacy. He is not alone in complaining about the wide range of meanings mechanisms have in the social sciences. They encompass not only the pathway or process by which an effect is produced, but often micro-level foundations for causal arguments and context-dependent explanations. Mechanism is sometimes used to describe any causal argument that is qualitative in nature, but also, any theory expressed by a formal mathematical model.[37] James Mahoney identifies over two dozen definitions.[38]

There is no obvious solution to this problem. Like all social science concepts, that of mechanism is a reification that can rarely be anchored in anything real. It can nevertheless be used legitimately in different ways by scholars who want to make causal inferences. Petri Ylikoski acknowledges the diversity of meanings that disturb Gerring, but is not troubled because he describes the concept of mechanism as more bounded than generally recognized. Almost all definitions encode the understanding of mechanism as something intended to produce some effect, irreducibly causal in character and possessing some kind of structure. A mechanism is intended "to make visible" how some effect of interest is produced. There is accordingly a hierarchy of mechanisms, with some capable of explaining others.[39] This chain must end somewhere because fundamental processes cannot be explained by mechanisms.[40] Mechanisms bridge levels, and work upwards and downwards. We can find mechanisms at the system level that appear responsible for unit-level effects, and vice versa.[41] Most fundamentally, the concept of mechanism rests on the indisputable claim – at least at the macro level – that causation is not instant, but takes place in time. For those who believe the world is causal in nature, it follows that there must be some connection between a cause and its effect, and the turn to mechanisms and processes is accordingly necessary to provide an adequate account of causation.

[37] Gerring, "Causal Mechanisms"; Hedström, *Dissecting the Social*; Mayntz, "Mechanisms in the Causal Analysis of Social Macro-Phenomena"; Steel *Across the Boundaries*, p. 39; Kinkaid, "Mechanisms, Causal Modeling, and the Limitations of Traditional Multiple Regression."

[38] Mahoney "Beyond Correlational Analysis."

[39] Ylikoski, "Micro, Macro, and Mechanisms."

[40] Ibid.; Hedström and Ylikoski, "Causal Mechanisms in the Social Sciences."

[41] Bechtel, *Mental Mechanism*; Darden, *Reasoning in Biological Discoveries*; Carver, *Explaining the Brain*; Wimsatt, *Re-Engineering Philosophy for Limited Being*; Ylikoski, "Micro, Macro, and Mechanisms."

I follow George and Bennett in their definition of a mechanism "as ultimately unobservable physical, social or psychological processes through which agents with causal capacities operate, but in specific contexts or conditions."[42] I also take up the suggestion of Guzzini that a useful definition of mechanisms should encompass their three dimensions: generality, specification, and determinacy.[43]

Generality: Mechanisms run the gamut from relatively bounded and observable ones of the kind preferred by Elster to those more difficult to define and observe. A timely example of the former is the combined effect of cell phones and the Internet in the 2011 "Arab Spring." They allowed the Tunisian opposition to make available worldwide commentary and images of demonstrations. Interviews with protestors in Egypt, Yemen, Bahrain, Jordan, and Syria confirm that information about the success of Tunisian dissidents in overthrowing a long-standing authoritarian regime was a catalyst for them to take to the streets.

Cell phones and the Internet are two separate but closely linked mechanisms, and to understand their effects we must examine the context in which they functioned. In Tunisia, the regime blocked YouTube and Flickr but not Facebook, apparently because too many Tunisians used it and a major backlash was expected if it were cut off. More Tunisians turned to Facebook, which became the vehicle for organizing the rebellion. Long-standing online censorship – a standard mechanism employed by regimes to stifle organized dissent – had encouraged young people to learn how to evade phishing and communicate without being monitored or interrupted. This experience was useful in Egypt when the government shut down the Internet. Egyptians found other ways of connecting, but the Internet may have helped to solve a critical collective action problem. There was widespread desire to oust Hosni Mubarak, but many people were afraid to step forward until they saw how many other Egyptians shared their goal.[44] In Syria, where the Internet was more effectively controlled, activists along the country's northern and southern borders used Turkish and Jordanian

[42] George and Bennett, *Case Studies and Theory Development in the Social Sciences*, p. 137.
[43] Guzzini, *Geopolitics Redux?*, ch. 11.
[44] William Saletan, "Springtime for Twitter: is the Internet driving the revolutions of the Arab Spring?," *Slate*, 18 July, 2011, www.slate.com/authors.william_saletan.html.

telecommunications systems to communicate and circulate news. This example makes apparent that any turn to a mechanism is merely an opening move in a broader but focused examination of context.

Some social scientists consider rationality a mechanism, but it is more properly described as a theoretical assumption.[45] Others treat equilibrium as a mechanism, and this too is a category error. Arthur Bentley and David Easton contend that swings to and away from equilibria are best characterized as a process, one made possible by diverse mechanisms.[46] The distinction between a mechanism and process is, I think, a useful one, although difficult to establish in practice. I return to this question later. Human motives are also widely described as mechanisms. Alexander Gerschenkron invokes desires for security and material well-being to explain patterns of economic development. They provide incentives for medium and late developers to use increasing degrees of state intervention to speed up economic growth.[47] For Hans Morgenthau, the *animus dominandi* is the source of conflict at every level of social aggregation but most acute in international relations where there are fewer restraints on actors and fewer peaceful and productive channels for self-aggrandizement.[48] Kenneth Waltz employs fear as the underlying mechanism of his theory; it makes – or should make – security the first concern of states, given his understanding of the anarchy of the international system. He also relies on survival of the fittest, assuming – incorrectly – that the international system is like a market that will reward countries that operate in accord with system constraints and opportunities and punish those who do not.[49]

Generality has another dimension: the domains in which we look for mechanisms. Charles Tilly describes three domains: environmental, relational, and cognitive.[50] Environmental mechanisms are external to actors and affect the conditions of social life. Relational mechanisms structure connections among people, groups, and networks. Cognitive mechanisms are internally generated and, in his account, include rationality. This typology alerts us to the possibility that mechanisms can come from almost anywhere. It tells us nothing about the nature of

[45] Guzzini, *Geopolitics Redux?*, ch. 11.
[46] Bentley, *Process of Government*, p. 274; Easton, *Political System*, p. 268.
[47] Gerschenkron, *Economic Backwardness in Human Perspective*.
[48] Morgenthau, *Political Theory and International Affairs*.
[49] Waltz, *Theory of International Politics*.
[50] Tilly, "Mechanisms in Political Processes."

mechanisms, how they are produced or have their effects. This is, of course, an unreasonable expectation as mechanisms are theory specific and context dependent. Their domain and level of generality will depend on the theory and its requirements. As a general rule, the more discrete mechanisms are in their operation and claims, the easier they are to document in a persuasive way.

Specification: It is difficult to distinguish mechanisms from processes. Many positivists use the terms interchangeably or define one in terms of the other. Charles Tilly attempts to differentiate the two concepts and defines processes as "frequently occurring combinations or sequences of mechanisms."[51] According to Tilly, mechanisms "have uniform immediate effects" although their longer-term consequences depend on initial conditions and the presence or absence of other mechanisms.[52] This is a questionable distinction because many processes, like phase transitions, are rapid, and many mechanisms, like an air conditioner or heating systems, are intended to be long-lived in the operation, if not in their effects. It is also a distinction Tilly violates. He describes democratization as a process facilitated by bureaucratic containment of the military, disintegration of existing trust networks, and governmental responsiveness to previously excluded segments of the population. None of these so-called mechanisms are by any means immediate in their effects.[53]

By his own definition, Tilly's three mechanisms are more properly characterized as processes, and each is the product of multiple processes and mechanisms. Bureaucratic containment of the military almost certainly depends on a number of reinforcing political and ideological changes within the military, the political elite, and perhaps the society at large. These changes are likely to be the result of many mechanisms and their combined interactions. In southern European countries, one important mechanism was the participation of national armed forces in NATO. Almost from the outset of their military service, young officers cross-trained with their counterparts from other NATO countries and were socialized into a different way of thinking about civil–military relations and the broader role of the armed forces in society. As I know from several decades of affiliation with the NATO Defense College, Portuguese, Spanish, and Greek officers sought acceptance by their northern European and North American

[51] Ibid. [52] Ibid. [53] Guzzini, *Geopolitics Redux?*, ch. 11.

peers and became conveyer belts of new conceptions and practices back to their respective armies, navies, and air forces.

One way around this problem might be to distinguish mechanisms from processes in terms of purpose. Mechanisms have a purpose; their parts work together for some end. Processes do not need purposes, and generally do not have them, although they certainly have effects. Their effects are generally unintended.[54] This conceptualization would limit the term mechanisms to instruments and procedures designed by humans with specific ends in mind. It would exclude many things commonly described as mechanisms in the literature. It is nevertheless empirically problematic because mechanisms often have effects at odds with their intended purposes. The emergency powers clause of the Weimar constitution, deterrence during the Cold War, and American intervention in Afghanistan and Iraq are cases in point.

Another strategy would relax the requirement of immediacy and adopt a relativistic approach to mechanisms. If so, we could describe something as a mechanism or a process depending on the purpose for which we use it. Containment of the military would qualify as a mechanism in the process of democratization. It could also be described as a process and we could look for mechanisms that bring it about. An alternative approach, which I think more promising, adheres to Tilly's distinction between mechanisms and processes. The former are more specific and immediate in their effects. This distinction would still allow analysis at multiple levels and require us to distinguish mechanisms from processes and study their interaction at each level of analysis.

Consider the balance of power, which many realists contend is decisive for war and peace. It is a process affected by a number of mechanisms, among them, balancing, chain-ganging, buck-passing, and bandwagoning. Each mechanism has been convincingly used in narrative accounts of specific outcomes. E. H. Carr and Hans Morgenthau contend that dilatory and delayed efforts at balancing by Britain and France, Italian and Soviet bandwagoning, and American buck-passing played a key role in bringing about World War II in Europe, although neither puts it in quite this language.[55] To understand these

[54] I am indebted to Nick Onuf for this distinction. Email to author, November 23, 2011.

[55] Carr, *Twenty Years' Crisis*; Morgenthau, *Politics among Nations*.

policies, one must turn to other political developments, including anti-war sentiment, fear of Bolshevism, and internal divisions in Britain and France. And this would only be a start, because we must also consider the causes of German, Italian, Soviet, and Japanese expansionism and risk-taking, and threat assessment. Here, too, our attention is directed to multiple pathways and deeper levels of analysis.

Process is an equally ambiguous concept. *Webster's* dictionary defines it as a continuous action or operation marked by gradual changes that lead to a particular result. This definition seems applicable to many kinds of political changes if we substitute "some" result for "particular" result, as the outcome of processes is often unpredictable. However, when we work backwards, as we do from known outcomes, the nature of the uncertainty shifts from the outcomes to the processes that helped to bring them about.

In the international relations literature, the word process is regularly used to describe, among other things, balancing, feedback, development, elections, decisonmaking, thinking, and the acquisition of knowledge. As noted earlier, duration cannot be used to make a hard-and-fast distinction between mechanisms and processes because the latter can be short-lived and the former long-lived. As a general rule, processes tend to unfold over longer time intervals, as in the examples of modernization, democratization, education, and reconciliation of former adversaries. The changes associated with processes generally lend themselves to measurement by degree, as they do in the examples above. Some processes, however, are associated with tipping points, making it possible for an additional increment of change to bring about a phase transition. The transitions from civil unrest to revolution, revolution to regime change, and conflict to war can often be described with reference to tipping points. As with many natural processes, the existence and location of tipping points only becomes evident in retrospect because it is entirely context dependent. Phase transitions are nevertheless produced by specific mechanisms, or combinations of them.

Webster's defines mechanism as a process or technique for achieving a result, which is not very helpful when thinking about politics. It does suggest that mechanisms are more discrete than processes in the sense that they do or do not produce an effect. Elections, changes in interest or tax rates, and military mobilization are classical mechanisms, all likely to produce well-defined results in the relatively short term, and often by reasonably well-understood means. Mechanisms also differ

from processes in that they are more likely to have identifiable triggers, making their onset more recognizable. The pathways between their onset and effects are also more visible. Processes, by contrast, may not be noticed until they are far along. Consider Elster's example of a breakup. These ruptures often come as a surprise to outsiders, and sometimes to the parties themselves. It is more difficult to analyze how processes work because, as we have seen, they are often themselves the product of multiple processes and mechanisms. This is demonstrably true of assimilation, modernization, democratization, international conflict, and adversarial reconciliation.

The preceding discussion suggests that differences between processes and mechanisms are more of degree than of kind. These concepts blend into each other. Researchers accordingly have considerable leeway in categorizing them, but should be explicit about their choices and offer justifications for them based on how they are to be used. Mechanisms and processes are not natural kinds but social constructions. So they are what we define them to be, although here it is useful to make a distinction between mechanisms designed by human beings, like electoral systems, and metaphysical ones like the balance of power and phase transitions.

Determinacy: Guzzini asks three questions about determinacy.[56] First is the likelihood that the conditions that trigger a mechanism will appear. Second is the possibility that these conditions will trigger multiple mechanisms with different, even opposing, consequences. Third is the requirement of enabling conditions for a mechanism to have its intended effect. I add a fourth question: the degree of independence of mechanisms from the processes they set in motion or are triggered by.

Let us revisit political protest. It is a common feature of many societies characterized by economic stagnation, political oppression, and elite corruption. It is also a response to economic and legal developments that arouse expectations of self-improvement. O'Brien and Li argue that protest in China is stimulated by the widening gulf between increasing legal rights in law and violation of these rights by local entrepreneurs in league with local governments. It is also facilitated by greater peasant appreciation of the possibility of exploiting the contradictions between law and practice as a form of rightful resistance.

[56] Guzzini, *Geopolitics Redux?*, ch. 11.

This recognition in turn was made possible by improved transportation and communication.[57] Several processes combine to raise local willingness to protest, and local protests stimulate those processes. O'Brien and Li are optimistic about the prospect of protest to bring about meaningful political change. Their critics doubt there is much chance of this because protests are often leaderless, focused on very specific grievances, and kept isolated by a regime that regulates personal movement and all other means of communication.[58]

Protest generally requires a catalyst. In China, where there are upwards of 20,000 protests each year, some of them violent, abusive behavior by local officials or capitalists almost invariably serve as the mechanism.[59] Nation-wide protests can be touched off by unanticipated mechanisms, as they were in Tunisia in 2011 with the self-immolation of a male shopkeeper who had been humiliated by a female police officer. The Tunisian protests gained numbers and momentum and brought down the government. Thanks to the Internet, they quickly spread to Egypt, Bahrain, Yemen, Jordan, and Syria. In all these countries resentment against regimes was high.[60] In the Arab Spring, self-immolation and the Internet are best described as mechanisms, although the latter may have set in motion a process of communication and coordination among anti-government activists that will continue in those countries where demonstrations were successfully repressed. In China, where protests are an everyday occurrence, they might be considered a process in their own right.

The fourth way of analyzing determinacy is in terms of the independence of mechanisms from the processes they set in motion and the outcomes they bring about. I identify four classes of mechanisms (see Figure 3.2) in this regard.[61] Type I mechanisms are closely linked to the processes or underlying causes responsible for the outcome we are

[57] O'Brien and Li, *Rightful Resistance in Rural China*. [58] Ibid.

[59] China Law Blog, "China rural protests decline: it's the economy stupid," February 1, 2007. Citing the Beijing *People's Daily*, which reported 23,000 such incidents in 2006, www.chinalawblog.com/2007/02/china_rural_protests_decline_i.html; Ariana Eunjung Cha, "As China's jobless numbers mount, protests grow bolder," *Washington Post*, January 13, 2009, www.washingtonpost.com/wp-dyn/content/article/2009/01/12/AR2009011203014.html; Michael Wines, "A Village Revolt Could be a Harbinger for China," *New York Times*, 26 December 2011, p. 1.

[60] Pelletreau, "Transformation in the Middle East": Anderson, "Demystifying the Arab Spring."

[61] Lebow, *Forbidden Fruit*, pp. 267–9.

Type	Characteristics
I	Linked to underlying causes
II	Independent but frequent
III	Independent and infrequent
IV	Independent and rare

Figure 3.2 Mechanisms

trying to explain. "Fender benders" are minor road accidents; they are more likely in cities where there are lots of vehicular traffic. In this instance, one mechanism – made likely, even necessary, by increased traffic – is tailgaiting. Any sudden breaking by any vehicle may well result in a fender bender. Many military incidents that trigger wars are also Type I mechanisms. They are generally outgrowths of deeper conflicts between countries and may be almost unavoidable products of escalation. In February 1965, in the aftermath of a Vietcong attack on the American advisers' barracks at Pleiku, National Security Adviser McGeorge Bundy wrote a memorandum to President Lyndon Johnson urging the sustained bombing of North Vietnam. Bundy later acknowledged that he compared Pleikus to "streetcars." He could count on repeated Vietcong attacks against South Vietnamese forces or their American advisers to provide him with the pretext he needed at the opportune moment to sell escalation to the president.[62] Type I mechanisms are unproblematic, and while their presence or operation can rarely be taken for granted in individual cases – Vietnam being an exception – they have a high statistical probability.

Type II mechanisms have independent causes but they still occur with some frequency. Rainfall is independent of traffic but a regular event in temperate climates. It will almost certainly increase the probability of fender benders on heavily trafficked and now slick streets, and more so in aggressive driving cultures, or in countries like India where no license is required to purchase or drive a car. In seventeenth- and eighteenth-century Europe, succession crises were common, given

[62] *Pentagon Papers*, vol. III, pp. 687–91; Hoopes, *Limits of Intervention*, p. 30.

restrictions on or confusion about the rules of succession and competing contenders with different internal and outside backers. Leaders looking for pretexts for war could not assume that one would come along, but could exploit them when they arose, as Louis XIV and Frederick the Great did.

Type III mechanisms are infrequent. A case in point would be bridge failure. In August 2007, the bridge on Interstate 35 collapsed where it crosses the Mississippi River in Minneapolis. Bridge failures are relatively infrequent and their probability is independent of the ebb and flow of traffic, which was high at the time because it was rush hour.[63] International relations provide many examples of Type III mechanisms. Consider the events of 9/11 and the so-called "War on Terror," for which they were an enabling mechanism. From the day it assumed office, the Bush administration was committed to the overthrow of Saddam Hussein in Iraq. American leaders exploited the terrorist attacks against the World Trade Center and Pentagon – events that were entirely unexpected – to invade Afghanistan and then Iraq.[64]

Type IV mechanisms are also independent of underlying causes. Like viruses that require a specific surface architecture to penetrate a target cell, they must meet a set of additional requirements to serve as mechanisms. The twin assassinations at Sarajevo are the quintessential example in international relations. They were the outgrowth of an internal struggle for power in Serbia and their timing was entirely independent of the confluences that made leaders in Vienna, Berlin, and Petersburg more risk-prone in 1914 than they had been a year or even six months earlier. Sarajevo met a series of conditions without which war would have been unthinkable for German and Austrian leaders. It removed the principal Austrian opponent to war, angered Emperor Franz Josef and Kaiser Wilhelm in ways that made them more receptive to strong action against Serbia, made it possible for German Chancellor Bethmann-Hollweg to win over the Social Democrats by making Russia appear responsible for any war. This allowed the German Kaiser and chancellor – men unwilling to accept responsibility

[63] Matthew L. Wald and Kenneth Chang, "Minneapolis Bridge had passed inspection," *New York Times*, May 22, 2008.
[64] Lebow, *Cultural Theory of International Relations*, ch. 9.

for war – to convince themselves at the outset that support for Austria would not escalate into a continental war, and that if it did, responsibility would lie elsewhere. Sarajevo was not a match that set the dry kindling of Europe alight, the metaphor routinely invoked by historians and international relations scholars. It was more like a permissive action link on a nuclear weapon; a mechanism at least as complicated as the weapon itself, and one that requires a specific code without which the warhead cannot be detonated.[65]

The probability of a mechanism being triggered varies as a function of type. Type I mechanisms are the most common and can more or less be assumed to occur. Type II through IV mechanisms are increasingly problematic because of their greater independence and irregularity. This typology does not address the other two questions surrounding determinacy. Some of the mechanisms offered as examples are indeterminate in their consequences or depend on the presence of other mechanisms or conditions to have one or more of these effects. The various succession crises, Sarajevo assassinations and the events of 9/11 are cases in point. Their consequences were entirely dependent on the presence of leaders willing and anxious to exploit them as pretexts for war. In their absence, these events would still qualify as mechanisms as they would have had important consequences, but different ones from what actually happened. These mechanisms had the potential to produce a diverse range of outcomes depending on the context.

Even this cursory investigation of mechanisms and processes indicates the extent to which we must work from specific outcomes to general understandings – or vice versa – and back again. Efforts to identify mechanisms and build causal maps must also rely on multiple comparisons. The Arab protests of 2010–11 offer a nice natural experiment as protests spread to countries characterized by high resentment but different degrees of ethnic division, regime cohesion, and willingness to use force against protestors. Historical comparison is also valuable. Reforms in the Soviet Union and Gorbachev's public encouragement of reform in Eastern Europe touched off a similar round of protests and, in this instance, the successful overthrow or transformation of all Communist regimes in Eastern Europe, but not everywhere else in

[65] Lebow, *Forbidden Fruit*, ch. 3.

the world.[66] The revolutions of 1848, by contrast, spread from France to Italy and Central Europe. They met with initial success, but were ultimately suppressed.

Comparisons of this kind suggest that mechanisms vary in their effects from case to case and across cultures and epochs. The Internet was most critical in Tunisia and Egypt, but less so in Bahrain and Yemen, less computerized cultures where protesters were drawn proportionately more from poorer and less educated segments of the population. It is less effective in China, due to generally successful efforts by authorities to block access to what they consider offensive or subversive external sites. There was no Internet available in Eastern Europe in the late 1980s and early 1990s, and only rudimentary forms of mass media in 1848. It was not an accident that people who worked in printing establishments were dramatically overrepresented among demonstrators in 1848 in Paris, Berlin, and Vienna. The Internet allowed communication among marginalized and dissatisfied groups, a function filled not as effectively in an earlier age by newspapers, broadsides, and *samizdat*. We must be sensitive to these differences, but also to their similarities.

The next chapter's case study explores links between a new visual frame and the conception of the territorial state. Multiple mechanisms are involved, and the subsequent construction of territorial states might be regarded as a process. I focus on the first stage of this development: the reasons political leaders had for centralizing and extending their authority over territories. A full study of this question would inevitably analyze it as the result of a confluence of conditions that provided the incentives to act this way. Among these might be the desire and need to extract more resources for both war making and display and to overcome pockets of domestic resistance that threatened the security of rulers.[67] Each motive would have its associated mechanisms. I address only one causal chain: the emergence of a frame of reference that made it possible for leaders to envisage the goal of a territorial state, in contrast to the very different way in which territory was conceived of in the Middle Ages. The principal mechanism was the map; changes in map design and their overall importance were critical in the creation

[66] Lévesque, *Enigma of 1989*; Herrmann and Lebow, *Ending the Cold War*; Dimitrov, *Why Communism Didn't Collapse*.

[67] Lebow, *Cultural Theory of International Relations*, chs. 5–6.

of a new imaginary. The evolution of maps, like the development of linear perspective on which it depended, were mechanisms deliberately designed for largely religious purposes. When developed in a changing political and intellectual setting, they functioned for quite different ends. My case study illustrates the sensitivity of mechanisms to the context in which they operate.

4 *The European reconceptualization of space*

Let's turn everything upside down, and proclaim the absolute and complete abolition of finite lines and the contained statue. Let's split open our figures and place the environment inside them.

Umberto Boccioni[1]

This chapter offers a case study of inefficient causation based on visual frames of reference, the process of rethinking the nature of the globe and the mechanism of maps. Visual frames are as important as discourses in their causal implications because we think in images, not only in words. The ways in which we organize and present images enable and constrain our thoughts and practices just as language does. Words in turn influence how we see and understand images.[2] In support of this claim, I explore the visual revolution of the Renaissance and show how it made it possible, perhaps even necessary, to imagine the territorial state.

Visual frames were not the only the only ones that facilitated the concept of the territorial state and its ultimate instantiation. The territorial state was a product of the sovereignty discourse, which drew heavily on Roman property law. Both discourses were associated with efforts of powerful rulers to extend their control over new territories and consolidate it within those already in their domain. Sovereignty also appealed to weaker agents as a possible means of staving off conquest by more powerful neighbors. The emergence of sovereignty and the territorial state are a complex story that cannot possibly be told in the course of a chapter. My goal is to shed light on only important parts of it: visual frames and the processes and mechanisms linking them to political conceptualization and practice.

[1] Boccioni, "Technical Manifesto of Futurist Sculpture."
[2] Dewey, *Art as Experience*, p. 4.

I begin by discussing the difficulty of establishing causal consequences of deep frames of reference. I then turn to the specific problems of designing a research strategy to associate the Renaissance visual revolution with the rise of the territorial state. To make my case, I compare this visual revolution and the nineteenth- and early twentieth-century one in geometry, physics, and art. In the Renaissance revolution there were numerous connections between developments in art on the one hand and mathematics and science on the other. This was not true of the modern visual revolution, where developments in art were largely independent of those in mathematics and physics. In contrast to its Renaissance predecessor, the modern visual revolution has had only a minor impact on political thinking and practice. I attribute these differences to the efforts in the Renaissance and early modern Europe to construct the autonomous identity. It provided an underlying catalyst for changes in visual and political conceptions and practices and they in turn helped to instantiate the visual revolution at least in part in practice.

My argument is doubly challenging because social science works to the unspoken rule of looking close at hand for explanations. Economists, political scientists, and sociologists rarely go outside their respective disciplinary domains to account for phenomena they consider important. In theory, all causal claims should be subjected to the same tests. In practice, we are more skeptical and demand more rigorous "proofs" for those further away from the domains in which we expect to find answers. The reason for this has nothing to do with science. We are more knowledgeable about our own discipline and its subject matter and more comfortable with the kinds of arguments and causal claims that have the sanctity of long-standing use. Many social scientists also believe that the categories we use to organize the world in some way capture the way the world is structured.[3] I argue in chapter one that there are no good grounds for believing that social kinds are natural kinds.[4] Analytical categories and concepts divide up the world to suit our needs and can only be justified on the basis of their utility.

These conventions make sense of the world by grouping phenomena that strike us as somehow related or profitable to study together. Categorization of this kind has been institutionalized through academic disciplines, as have a related set of concepts and tool kits.

[3] King, Keohane, and Verba, *Designing Social Inquiry*.
[4] Kratochwil, "Evidence, Inference, and Truth."

Organizational imperatives create additional incentives for boundary maintenance and impart a sense of naturalness to often arbitrary and always artificial divides. Over time, as Nietzsche observes, these illusions become truths because we have forgotten their origins.[5] Little effort is made to look beyond existing boundaries for explanations, and those imported from the outside are greeted with skepticism, if not hostility. A notable exception is when they come from high-status disciplines and their invocation promises personal, material, and institutional advancement. Political scientists are accordingly far more likely to borrow from economics than they are from anthropology.

I stress the importance of looking beyond disciplinary trenches for explanations because it is necessary to understand economic or political behavior in an open-ended, non-linear world. Constructivists should be particularly sensitive to this need given their interests in identity, and society more generally, as the source of human identities, goals, and behavior. To understand how identities or norms form and influence political behavior, we need to expand our inquiries beyond politics. In this chapter I show how this might be done in theory and practice. I start from the premise that identities and other deep frames of reference shape the goals of actors, their receptivity to information, interpretation of it, and their behavior. To study these linkages we must go beyond efficient cause to constitutive frameworks, and from the domain of international relations to other domains and attributes of societies.

Frames of reference

Deep levels of constitution leave fewer traces than more superficial ones. Because they are taken for granted, they are rarely theorized, or even mentioned, by relevant actors. We must design clever strategies to detect their presence and tease out their operation and consequences. The most obvious strategy is before-and-after comparison. Can we find evidence that the thinking and behavior of individuals, groups, or societies has changed in ways that might be attributed to the rise or decline of a particular frame of reference?

Attempts to implement this strategy confront four kinds of problems. The first concerns the role of the researcher. We inevitably bring our own frames of reference to any analytical problem. Do they stand in the

[5] Nietzsche, *Genealogy of Morals*, 1.13.

way or help us identify the frames that are important for actors with regard to the relata in question? Max Weber urged us to reflect on our own position in a culture or society before attempting to understand that of someone else. We need to think not only about our frames of reference but those we create as analytical categories to capture and describe the cognitive schemas of others. Are we fairly or unfairly imposing these frames on them, and how would we know? As with hermeneutic readings of texts, we need to work at improving our readings to develop as much consistency as possible with statements and behavior. To avoid circularity, this must be done with statements and behavior different from those we wish to explain.

Then we face a series of empirical challenges. The success of a new frame is rarely complete, nor is the demise of an older one. Often, new frames coexist with previous ones even after the former have become dominant. So it is rarely possible to construct before-and-after as a strict binary. Rather, it must be framed in terms of more or less. We accordingly need good ways of measuring the relative rise and decline of competing frames of reference.

New frames of reference do not develop overnight, and some take many decades, if not centuries, to become important or dominant. In these circumstances, it is still possible to do before-and-after comparisons, but it is more difficult and less convincing because there will be so many other important changes in context in the course of long transitions. In this circumstance, it might prove more productive to focus on the transition period. We could begin with the first documented appearance of a new frame of reference and end with some symbolic marker of its dominance. We could then stipulate the kinds of conceptual and behavioral changes the new frame of reference is expected to produce. If it replaced or marginalized an existing frame of reference, we need to describe the kind of thinking and behavior we expect to decline. Assuming it is possible to identify and measure at least some of these theorized consequences, the presence and slope of their respective rise and fall in the course of the transition might constitute reasonable evidence for attributing causal consequences of the frame in question.

It is difficult to establish causal links between a frame of reference and behavior. We cannot merely assert that a frame of reference opens some lines of thinking and behavior and closes off others, or makes them more or less likely. As with any causal argument, we must provide

a chain of logic linking putative cause to theorized effect, invoking mechanisms or processes to show how they are connected. We must then look for empirical evidence in support of our claims. Consider Christianity's decline as a central frame of reference in Europe over the last two centuries. Even for most of the minority who remain believers – less than 40 percent in most Western European countries – secular forms of identity have become dominant.[6] Secularization should influence the trade-off between material and spiritual rewards, as traditional Christianity put more emphasis on afterlife than earthly life. We could search for evidence of an inverse relationship between religious commitment and the pursuit of wealth, Calvinists and similar sects aside. We could also compare samples of contemporary people who self-identify as religious and secular and measure their respective valuation of affluence.

The focus on transitions is a variant of before-and-after comparison. A different strategy involves the comparison of successive frames of reference and the patterns of conceptual and behavioral change associated with them. In our example of religion, this would entail comparison of pre-Christian societies with their Christian and post-Christian counterparts. Frames of reference can be deemed successive when one replaces another, as Christianity did paganism. This does not rule out the survival of certain aspects of paganism or their influence on the character and practices of Christianity.[7]

My case study is complex as it employs before-and-after and successive comparisons. The before-and-after comparison involves multiple changes in the theory and practice of art and a parallel changes in optics and mathematics. Linear perspective, and the other changes associated with the visual revolution of the Renaissance, developed relatively rapidly, in the course of some two hundred years. Linear perspective begins with Giotto, and notably, his *Life of St. Francis* in the Upper Church of the Basilica of St. Francis of Assisi, painted between 1296 and 1304. It becomes more pronounced in the work of

[6] Gallup Polls, reported at Religious Tolerance.org, www.religioustolerance.org/godpoll.htm. The Pew Forum on Religion and Public Life, "US Religious Landscape Survey," July 1, 2009, http://religions.pewforum.org/reports, nevertheless shows an across-the-board decline in formal affiliation; Association of Religious Data Archives, www.thearda.com/internationalData/compare.asp. See Pfaff, "Religious Divide," for statistics that show less of a gap between the US and Europe.

[7] Cameron, *Last Pagans of Rome*, for this transition.

Ghiberti and Masaccio, and is first theorized by Leon Battista Alberti in his *De pictura*, published in 1435. Quite independently of linear perspective, portraits became less stylized and more personal. Leonardo's unfinished *Adoration of the Magi*, painted in 1482, was a milestone. It portrays different facial types and expressions, used to suggest different relationships among the figures depicted.

A core argument of this chapter is that the Renaissance visual revolution was part and parcel of another transformation: the emergence of the autonomous individual. It started as a philosophical project and later found expression in the arts and political and social thinking and practices. The construction of the autonomous individual begins in the High Middle Ages, became more pronounced in the Renaissance and continued into the modern era. It is ongoing, as almost every generation of writers down to the present, and more recently, social scientists, have noted a continuing trend toward individual autonomy.[8]

The hypothesized relationship between the visual revolution and the autonomous individual does not permit a straightforward before-and-after comparison because of their temporal overlap. They begin at about the same time, but the visual revolution was more or less complete within two hundred years. This is not a problem because I do not contend that one development was responsible for the other, rather that they were mutually constitutive and reinforcing. I accordingly look for connections between them, as in efforts by artists to treat their subjects as unique individuals.

I maintain that linear perspective and the autonomous individual were critical to the development of the territorial state. There is a temporal sequence here, as the rise of the territorial state followed on these other developments. I do not postulate linear perspective and the autonomous individual as direct causes of the territorial state in the sense of efficient cause. Rather, I suggest that the visual revolution and the project of the autonomous individual made it possible – perhaps even necessary – to imagine the territorial state, defined as a land area over which a single hierarchical authority is exercised. Linear perspective did this by imposing a single organizing principle on space, and with it, a privileged viewing position to which all objects in the frame were related and subordinated. The territorial state is the imposition of this visual framework on a land area. The autonomous individual

[8] Lebow, *In Search of Ourselves*, ch. 1.

encouraged the extension of autonomy to collective units, which would culminate in the idea of the sovereign state. Once the territorial state was theorized, it became possible for powerful leaders to implement the concept in practice. This gave other leaders additional reasons to follow suit, and from the seventeenth century on building territorial states became a major political project in Europe.

Constitution requires a conception of that which is to be constituted. Actors must be aware of this possibility and have incentives to instantiate it in practice, as leaders in early modern Europe did with the territorial state. In this chapter, I only address the first step in this process: construction of the imaginary. I do this in the first instance by looking at the emergence of new frames in visual art and a new identity, and then for links between them and new conceptions of political space. New ways of conceiving of and mapping the earth turn out to be an important mechanism in this regard. Inefficient causation entails multilevel inquiries to connect frames of reference to behavior. As I am only looking at the emergence of a frame of reference, not its consequences, I say nothing about the processes and mechanisms connecting it to political behavior.

The nineteenth century witnessed a second visual revolution that began in the field of mathematics with Riemannian geometry, and influenced physics in the early twentieth century with the development of relativity. A similar revolution began in the visual arts, starting with Impressionism and continuing through Cubism and a number of experimental approaches to art and literature that developed in the twentieth century. In mathematics, physics, art, literature, and, later, architecture, non-linear perspectives became increasingly prominent, and with them, efforts to fracture space, do away with boundaries, central points, and meta-narratives, around which to order objects and people. This revolution has been profound, but not nearly as universal in appeal as its linear predecessor. Non-linear art and literature have little reach beyond educated elites. Let me reiterate that non-linearity should not be equated with modernism, a catchall term for diverse twentieth-century intellectual and artistic developments, which has had important political consequences. The umbrella of modernism is often extended to include non-linear representation in art, but is by no means synonymous with it. It is fair to say that most literary and artistic works described by modernism remain linear in their perspective.

Two successive visual revolutions, almost five hundred years apart, encourage cross-case comparison. In the Renaissance revolution, linear perspective was part of a suite of related developments in art, mathematics, and science. All of them, I hypothesize, were connected to the political–philosophical project of individual autonomy. This is not the case in the more recent visual revolution, where there has been no novel transformation of identity. This may explain why in the Renaissance and early modern Europe, the links among mathematics, science, art, and political conceptions are thick and easy to document while in the nineteenth and early twentieth centuries they are not. Developments in mathematics and science are unconnected to those in the arts, and there is no evidence of the latter being seriously affected by the former. The influence of these several fields on political conceptions extends no further than metaphors like web, filaments, and networks. This important difference between the two visual revolutions offers indirect evidence for the importance of the political–philosophical project of the autonomous individual for reinforcing developments in art and other fields.

This is an admittedly complex problem and research design. I think it justified for several reasons. It allows me to explore inefficient causation at the most important but fundamental level: that of deep frames of reference. It documents my contention that we live in an open-ended world where much that happens in politics and international relations is ultimately a function, or at least influenced by, developments in other domains. The case study allows me to exploit the several strategies I have described for probing the implications of frames of reference for beliefs and behavior. Finally, the rise of the territorial state is a major historical question and one of great importance for international relations.

Fully elaborated and documented comparisons of the kind I make would require a book in its own right. I offer what follows as an illustration of how such research on constitution and cause can be conducted. It raises a new set of questions – notably, about the relationship between identity and other cognitive frames of reference.

The territorial state

The dominant actor in the modern international system is the territorial state. It is distinguished by its ability to impose its authority

on a contiguous and effectively demarcated space.[9] In the words of John Herz, a state is "an expanse of territory encircled for its identification and defense by a 'hard shell' of fortifications."[10] Territorial states limit their authority to specific land areas in contrast to the more universal claims of empires and religions. This reformulation was the result of a long political and legal process that transformed the nature of political authority and its relationship to land.[11] Early medieval Europe was "a patchwork of overlapping and incomplete rights of government" which were "inextricably superimposed and tangled," and in which "different juridical instances were geographically interwoven and stratified, and plural allegiances, asymmetrical suzerainties and anomalous enclaves abounded."[12] Medieval authority was personalized and rarely absolute as actors had overlapping rights and privileges. Peasants, lords, and kings frequently exercised different kinds of authority over unconnected parcels of land without definitive boundaries.[13]

Actors were largely untroubled by this heteronomy because they considered themselves and the earth part of a universal and divine order. Medieval cosmology distinguished between terrestrial and celestial regions, the latter encompassed everything from the moon to the limits of the universe. Genesis 1.9 divided the terrestrial region into earth and water. The land portion was known to the Greeks as an *oikoumene*, a community that was a generally described as coterminous with the three contiguous continents of Europe, Asia, and Africa. Jerusalem was thought to be the center of this community and the universe.[14]

Political scientists reject the claim that the territorial state was the inevitable product of economic developments.[15] John Ruggie,

[9] Herz, "Rise and Demise of the Territorial State; Ruggie, "Territoriality and Beyond"; Spruyt, *Sovereign State and Its Competitors*.
[10] Herz, "Rise and Demise of the Territorial State."
[11] Ibid.; Kratochwil, "Of Systems, Boundaries and Territoriality"; Holzgrefe, "Origins of Modern International Relations Theory."
[12] Ruggie, "Territoriality and Beyond," quoting Strayer and Monro, *Middle Ages*, p. 115; Anderson, *Lineages of the Absolutist State*, pp. 37–8. Bloch, *Feudal Society*, vol. I, p. 215; Lattimore, "Feudalism in History"; Spruyt, *Sovereign State and Its Competitors*, pp. 34–58.
[13] Ruggie, "Territoriality and beyond"; Duby, *Three Orders*, p. 286.
[14] Grant, *Planets, Stars, and Orbs*, pp. 11–45; Romm, *Edges of the Earth*, p. 37; Cosgrove, *Apollo's Eye*, pp. 50–66; Bartelson, *Global Community*, ch. 3.
[15] See North and Thomas, *Rise of the Western World*, for a strong economic claim.

Hendrik Spruyt, and Daniel Nexon point out that when centralized territorial states began to emerge, many would-be territorial states failed while some city states, city leagues, and dynastic regimes grew and prospered.[16] Such diversity defies claims that only one form of political organization was economically rational. Like John Herz before them, Ruggie, Spruyt, and Nexon find political and legal developments more important.[17] Ruggie emphasizes the legitimacy that sovereignty conferred on territorial states. Spruyt directs our attention to the role of political coalitions and the superior ability of leaders of territorial states to form and maintain them as well as their ability to standardize weights, measures, coinage, and laws.[18] Herz, Spruyt, and Nexon consider the success of the territorial state to be highly contingent and non-linear.[19]

Ruggie notes other developments that contributed to the success of the territorial state, among them the framing by Machiavelli and Hobbes of political actors as autonomous and egoistic beings, the corresponding emergence and spread of the "I" form of speech and the spatial reconfiguration of households to provide separate rooms for separate activities.[20] The most important development, he insists, was single-point or linear perspective in the arts. It carried over from art to politics: "What was true in the visual arts was equally true in politics: political space came to be defined *as it appeared from a single fixed viewpoint*. The concept of sovereignty . . . was merely the doctrinal counterpart of the application of single-point perspective forms to the spatial organization of politics."[21] This outcome, Ruggie suggests, was neither automatic, nor rapid as it took considerable time for people to absorb the new perspective and its practical and political implications.[22]

Shifts in visual paradigms are relatively rare; scholars are in general agreement that one occurred in the Renaissance with the rediscovery

[16] Ruggie, "Territoriality and beyond"; Spruyt, *Sovereign State and Its Competitors*; Nexon, *Struggle for Power in Early Modern Europe*.
[17] Herz, "Rise and Demise of the Territorial State"; Tilly, *Formation of National States*; Mann, *Sources of Social Power*, vol. I; Parker, *Military Revolution*; Ertman, *Birth of the Leviathan*.
[18] Spruyt, *Sovereign State and Its Competitors*.
[19] Herz, "Rise and Demise of the Territorial State"; Spruyt, *Sovereign State and Its Competitors*; Nexon, *Struggle for Power in Early Modern Europe*.
[20] Borkenau, *End and Beginning*; Duby, *History of Private Life*, vol. II.
[21] Ruggie, "Territoriality and beyond"; Le Goff, *Time, Work, and Culture*, pp. 30–7.
[22] Ibid.

of linear perspective.[23] Ruggie offers no evidence to the effect that the visual revolution in art, architecture, and science was responsible for, or accelerated, the reconceptualization of territory. Nor does he suggest any mechanism whereby changes in science and arts should prompt changes in political conceptualization and practice. Consistency is one possibility; once space was framed in a particular way, territory had to be envisaged similarly. However, human beings find many ways of "seeing" things in contradictory ways and of holding contradictory beliefs. Ruggie's thesis, while not necessarily wrong, is incomplete. We cannot rule out the possibility that the reconceptualizations of space in science, art, and politics were not causally linked, or that all three reconceptualizations were themselves manifestations of more fundamental changes in European society.

The most recent work on the rise of the state is Andrew Latham's *Theorizing Medieval Geopolitics*. It rejects the foundational assumption of the works discussed above, and of Marxists and many realists, that there was a radical rupture between the late medieval and early modern worlds. To the extent that there was a sharp discontinuity, Latham insists, it came in the early thirteenth century, not the mid-seventeenth, and gave rise to the ideas and institutions of sovereignty, territoriality, the state, law, and diplomacy. By 1200, a concept of sovereignty had materialized that was largely unchanged until the French Revolution. By the mid-thirteenth century, private war had largely given way to conflicts between public authorities over essentially political issues. Contemporaries described the latter as war, and distinguished it from brawls. Hobbes and Bodin did not so much invent the concept of war as relocate it from community to state.[24]

Drawing on Ben Holland's work on Roman law, Latham contends that the concept and norm of sovereignty arose from the rediscovery of Roman law about absolute and private property. In contrast to Ruggie and Kratochwil, Latham argues that a more unitary, "bundled" and exclusive concept of property rights emerged. Known as *dominium*, it authorized property owners to exclude others from their land. It became, to use Kratochwil's term, a generative grammar. Latham, in effect, accepts Kratochwil's argument about a sovereignty discourse,

[23] White, *Birth and Rebirth of Pictorial Space*; Edgerton, *Renaissance Rediscovery of Linear Space*.
[24] Latham's *Theorizing Medieval Geopolitics*, p. 3.

but situates the emergence of in the late Middle Ages, rather than in early modern Europe.[25]

Latham concedes that the late medieval state differed from its modern counterpart in many ways. States were sovereign only with respect to temporal affairs, sharing sovereignty with the church in religious matters; they exercised control, but not a monopoly over violence; sovereignty was sometimes de jure and sometimes de facto; it was vested in the political community as corporation, not in the state; it was sometimes exercised at some remove through intermediary powers; it was not always reciprocal, especially in relations between kingdoms and lesser polities. The late medieval state is best characterized as a mixed system, in which other rights were important. It was at least as much Lockean as Hobbesian.[26]

Latham's argument parallels one I make in *The Politics and Ethics of Identity*.[27] In contrast to historians and philosophers who maintain that individual interiority did not emerge until the Renaissance, or even early modern Europe, I find no sharp rupture with the past. Literary and other evidence indicates that interiority existed in the ancient world, albeit it in a more muted form. It became more pronounced in the late Middle Ages, several hundred years earlier than is generally alleged. This development was apparent in both literary texts and social practices. I further contend that the traditional distinction – dating back to Burckhardt and Durkheim – between ancient and modern identities should be regarded as one of degree than of kind. Their writings, and the pioneering nineteenth-century literature on the state, were part and parcel of the project to establish modernity. One of its most important intellectual foundations is the belief that modernity represents something very different from what had gone before. The present is conceived in linear rather than cyclical terms, and in many ways an improvement on the past. Sharp ruptures are invoked to help establish these claims empirically.

The territorial state does represent a break with medieval practice, but one that emerged gradually and has roots, as Latham maintains, in the High Middle Ages. It also seems evident that the rediscovery of Roman law provided discourses that facilitated claims of more total control over property. This included political units, as they were

[25] Ibid., p. 56. [26] Ibid., p. 134.
[27] Lebow, *Politics and Ethics of Identity*, ch. 8.

conceived of at the time as personal patrimonies. Latham's argument begs the question of the extent to which these discourses made it possible to imagine sovereignty or were useful in justifying the emergence of a concept and practice desired for other reasons. I would nevertheless be surprised if the arrow of influence worked in only one direction. My general understanding of discourses suggests that those that become prominent do so because they instantiate, advance, or justify ongoing or previously envisaged projects. This said, discourses, or any other kind of cognitive frame, can help actors frame these projects in more coherent or different ways and thus have substantive as well as instrumental consequences.

The territorial state is closely connected to sovereignty, as the latter is the legal principle that validates the former. Both terms describe concepts and practices, which further complicates any attempt to unravel their relationship. Latham documents how the practice of sovereignty emerged before the concept, but it was highly constrained and not often accepted by powerful rulers who sought to expand their authority over weaker units. Several centuries later, the Treaty of Westphalia recognized sovereignty as the legal norm, but it was still far from universal in practice.[28] In this connection it is important to remember that the nascent sovereignty discourse could have developed in different directions and that its actual evolution was shaped in large part by emergent practices.

The territorial state benefitted from the discourse on sovereignty, but it was only one of the cognitive frames that made it possible to imagine and implement. Another important development was evolving conceptions of the earth. This process brought about closer connections between science and art, and between art and politics. As Kant would later suggest, conceptions of space provide the basis for some of humanity's most important regulative ideals.[29] The Greeks had developed the abstract notion of the sphere and conceived of the earth as such an object. The Renaissance reconceptualization of the earth's surface as a global space conditioned the practices of territorial demarcation and national identity construction. Jens Bartelson argues that it now became possible to justify claims of sovereignty on the basis of

[28] Osiander, "Sovereignty, International Relations, and the Westphalian Myth."
[29] Kant, *On the Form and Principles of the Sensible and Intelligent Worlds*, §4, 2:293 and §76, 5:404. Also, Sloterdijk, "Geometry in the Colossal," p. 33; Lefebre, *Production of Space*, p. 42.

the distinct character of different peoples. This shift in perspective provided the intellectual as well as visual foundation for the subsequent imaginary of an international system composed of territorial states. It made the territorial state look natural.[30] It also provided the basis for conceiving of peoples as different, but each contributing in its own way, as Herder imagined, to the mosaic of humanity.[31]

The abandonment of the medieval *orbis terrarum* and Christian concept of a world community were facilitated by cartographical advances in the fifteenth century. They were inspired by the quest for less expensive and safer routes to the East Indies. It resulted in the landmark Renaissance achievement of the *Navigazioni e Viaggi* (1550–59), in which Ramusio contended that the entire landmass of the earth was inhabited.[32] The construction of globes as geometrical objects and their division into distinct territories made it possible to divide that space by well-known geometrical methods and encouraged use of these divisions to justify empires and states. They also provided justification for sovereignty, stories of nationhood and outward expansion by European states.[33]

In 1478, Abraham Zacuto circulated his *Almanach perpetuum*, which facilitated the measurement of latitude from measurements of the sun's position in the sky. Many subsequent solar tables soon appeared.[34] These developments were of particular interest to the Portuguese, who were engaged in a project of overseas expansion. Luis de Camões published his *Os Lusidas* in 1572. It depicted the earth from a single vantage point and became a source of Portuguese national identity and a justification for its emerging empire.[35] There were similar developments in England and Spain. Maps and narrative accounts of discoveries were used in both countries to arouse patriotic sentiments and construct national identities. Imperial expansion led to acute conflicts; that between Portugal and Spain was settled on the basis of geometric principles in the Treaty of Tordesillas in 1494 and

[30] Bartelson, *Visions of World Community*, ch. 4.
[31] Herder, *Herder on Social and Political Culture*.
[32] Goldstein, "Geography in Fifteenth-Century Florence"; *Globalism*; Cota, "Tolerance in Early Modern Geography," p. 866; Bartelson, *Visions of World Community*, pp. 72–5.
[33] Pagden, *Lords of All the World*; Yates, *Astraea* p. 27.
[34] Brotton, pp. 53–4, 83; Headley, *Sixteenth-Century Venetian Celebration*, p. 9.
[35] Quint, *Epic and Empire*, pp. 113–15.

Treaty of Zaragoza in 1529. These settlements may have influenced how Europeans came to think about their home territories.[36]

Quattrocento artists became interested in cartography, a development facilitated by Florence's role as the center of map making. Grid techniques, central to the *portolan* maps used by Mediterranean navigators, were adapted to painting. Samuel Edgerton Jr. speculates that Ptolemy's *Geographia*, which came to Florence from Byzantium in about 1400, may have been "the missing link" between science and architecture, as it stimulated Brunelleschi's studies of linear perspective.[37] Early Renaissance maps did not emphasize accuracy. They sought to represent transcendental truths about the cosmos, as did *mappae mundi*, in which the physical world was metaphorically represented as the body of Christ. Map makers were more interested in denoting the presence of islands and territories than in depicting their outlines. The seventeenth century witnessed a growing emphasis on realism, especially in Dutch cartography. This was made possible by the Renaissance rediscovery of Ptolemaic cartography and advances in optics, many of them by the Dutch. Significant too was the belief, which soon found expression in the visual arts, that sight is the sense through which god reveals his creation to mankind.

Maps, beginning with cadastral surveys, provided early rulers with practical information helpful in asserting territorial claims. Maps underwent further evolution as they became the servant of the territorial state. In 1559, Philip II of Spain sought to map his dominions on the Italian Peninsula and elsewhere in Europe. He instituted the *Relaciones topográficas* in the 1570s and sent a list of questions to colonial officials seeking information on the geography, history, resources, economy, and population of their territories. Other political leaders followed suit. Map making of this kind encouraged rulers to understand their holdings as unitary and contiguous entities – or to try to turn them into such units – and redefine themselves as sovereign–territorial rulers.[38] The possibility remains that rulers were drawn to maps because they had already begun to conceive of the territories in

[36] Branch, "'Colonial Reflection' and Territoriality."
[37] Edgerton, *Renaissance Rediscovery of Linear Perspective*, p.120.
[38] Black, *Maps and History*, pp. 12–16; Harley and Woodward, *Cartography in Prehistoric*, vol. I; Kivelson, "Cartography, Autocracy, and State Powerlessness"; Biggs, "Putting the State on the Map"; Parker, *Grand Strategy of Philip II*, pp. 59–63.

spatial terms. Archival research can presumably shed further light on this relationship.

Ruggie's thesis is problematic in another respect. His mechanism of linear perspective did not have its intended consequences. It originated as part of a religiously motivated project to bring god closer to Christians by restructuring how religious subjects were presented visually. Roger Bacon (*c.*1220–92) urged that geometry and optics be harnessed toward this end.[39] Meister Eckhart, an early fourteenth-century mystic, and St. Antonine, archbishop of Florence (1446–59), expanded on this theme and wrote about how *lux gratiae* (the light of grace) pervades the universe.[40] Giotto, Duccio, Cimabue, Ghiberti, and Masaccio were deeply religious men who adopted perspective in part to encourage piety.

There were other innovations inspired by traditional values that helped to undermine those values. The most dramatic example may be printing with movable type, invented at the same time as linear perspective. Most of the first books printed were bibles or Latin grammars, and many early printers and their patrons were inspired by religious goals. Probably more than any other innovation, printing facilitated the rise of secularism and oppositional political movements. This outcome was not intrinsic to the mechanism of printing but the result of how diverse agents exploited its possibilities. Linear perspective is analogous. Its invention did not lead ineluctably to the territorial state; it required agents to disassociate it from its religious connection and reformulate it as a prop for their transformative projects.

How does Ruggie's argument map onto my continuum of cognitive frames? Following David Harvey, he contends that space and time are basic categories of human existence and the transformation of space–time frames in the Renaissance produced the "modern mode."[41] He laments that we have no theory of this transformation and in lieu of one offers an account of how the modern system of states was constructed. It is an avowedly instrumental account as the question he intends to address is "what were the raw materials that people used and drew upon in constructing it?" Linear perspective is described as one of these raw materials. This would place it at the far end of my continuum that applies to frames that are consciously exploited to advance a project.

[39] Bridges, *"Opus Majus" of Roger Bacon*.
[40] Edgerton, *Renaissance Rediscovery of Linear Perspective*, pp. 60, 75.
[41] Harvey, *Condition of Postmodernity*.

Ruggie further asserts that "The concept of sovereignty . . . was merely the doctrinal counterpart of the application of single-point perspectival forms to the spatial organization of politics."[42] This seems to suggest that linear perspective had at some point moved far enough up the continuum to make it logical, if not necessary, to view and organize political space as a single, related field.

Ruggie asks how linear perspective came about, and embraces the suggestions of some art historians that it was particularly suited to Renaissance civilization. Such a claim verges on the tautological. Perhaps sensing this difficulty, Ruggie suggests "material changes may have awakened both a need and a desire for this broad transformation in the prevailing social episteme, which produced new spatial forms. And entrepreneurial rulers could and did try to exploit those new images and ideas to advance their own interests."[43] Once again, Ruggie offers no hint about what these material changes might be or how and why they evoked certain needs. As with his argument about a possible future change in space–time frames, he resorts to the surprisingly unconstructivist move of falling back on material developments to account for intellectual and artistic expressions. In effect, he proposes a linear explanation for linearity.

Art, science, and politics

The visual revolution that began in the Renaissance may have started with the rediscovery of linear perspective but went well beyond it.[44] Medieval art often represented space as a largely undefined field on which multiple, sometimes unrelated, activities could be depicted. There was no compulsion to organize space as a whole, with the parts subservient to the larger whole. Tapestries, canvases, and sculptures are generally filled with detail and our attention flits from one part of the work to another. To the extent that there is any unity, it is often in the feelings these works evoke or the religious messages they convey. Romanesque art nevertheless sought to create a sense of homogeneity by reducing space and bodies to two-dimensional surface representations.[45]

[42] Ruggie, "Territoriality and beyond." [43] Ibid.
[44] White, *Birth and Rebirth of Political Space*, p. 103; Hartt and Williams, *History of Italian Renaissance Art*, pp. 161–6.
[45] Panofsky, *Perspective as Symbolic Form*, p. 51.

With the Renaissance and renewed interest in Greek forms, space assumed a new importance. The idea of perspective reemerged, and with it, the imposition of an overall order by which the parts can be related spatially to one another by their relationship to the whole. A major breakthrough in this connection was Giotto's *Life of St. Francis* in the Upper Church of the Basilica of St. Francis of Assisi (1296–1304). The artist imagined the viewer centrally positioned in front of each set of frescos and arranged for the lines of perspective to converge on a vertical axis running through the central picture of each group.[46] The first surviving picture to make full use of linear perspective was Masaccio's *Trinity* fresco in Santa Maria Novella, Florence, painted in about 1425. Space and its arrangement quickly became the organizing principle for art.[47] In paintings, compositional unity was achieved by balancing color and form, foreground and background. We are still drawn to details, but in a different way. Our eyes go to and away from them as part of the process of understanding the whole. The sum is now more important than its parts, which are increasingly subordinated to it. These artistic developments found parallels in science, history, and philosophy.

In the quattrocento, the term *perspectiva* was used exclusively in optics, which since the ancient Greeks had been considered a branch of mathematics. At the end of the first half of the fifteenth century, the concept was taken up by artists. The *Commentari* of Florentine sculptor Lorenzo Ghiberti (*c.*1450), describes the science of *perspectiva*.[48] Italian architects and artists were fascinated by optics. Some, like Leonardo, had an abiding interest in science and conceived artistic creations as scientific experiments. To show how multiple views of a person could be presented without violating the rules of perspective, Giorgione painted a nude man standing in a pool of still water and turning to one side. His front was visible as a reflection, as was his hidden profile in a burnished cuirass placed alongside him. On his other flank was a mirror that revealed his reverse profile. The work was greatly praised for its ingenuity and beauty.[49] Mapping techniques

[46] Ibid., pp. 23–30; Edgerton, *Renaissance Rediscovery of Linear Perspective*, pp. 14–15; White, *Birth and Rebirth of Pictorial Space*, pp. 23–30.
[47] See Alberti, *Opere volgari de Leon Alberti*, for the earliest attempt at codification.
[48] Edgerton, *Renaissance Rediscovery of Linear Perspective*, p. 60.
[49] Vasari, *Le vite de' più eccellenti pittori, scultori e architettori nelle redazioni del 1550 e 1568*, vol. I, p. 23.

also came into use. Beginning with Masaccio, Florentine artists began to use a grid system to transfer outlines and details of sketches to walls or canvases to be filled by frescos or paintings.[50] David Hockney contends that many of the old masters used the novel technology of concave mirrors to reflect outlines of the faces they painted on canvas so they could be traced.[51] Giotto is described by Filippo Villani as having used this technique for frescos.[52] X-ray studies of faces, including that of van Eyck's *Arnolfini Wedding*, indicate that this process was employed, but that artists' hands were guided more often by inner visions that led them to depart from strictly realistic portrayals.[53]

In contrast to the Renaissance, science and art in the modern period have only the loosest connection. The modern reconceptualization of space began in mathematics with the development of non-Euclidean geometry by Nikolai Lubachevsky, János Bolyai, and Carl Friedrich Gauss. Using the concept of manifolds, Bernhard Riemann (1826–66) theorized an infinite world of non-Euclidean geometries, including hyperbolic (negatively curved) and spherical (positively curved) geometries. Subsequent work on Riemannian manifolds introduced another layer of abstraction and complexity. These geometries bear some relationship to Euclidean geometry but relax or dispense with many of its key features. They most often incorporate points but not necessarily lines, distance, and planes. Mathematics has also extended our conceptions of space by introducing additional dimensions beyond the three spatial dimensions and time.

Henri Poincaré (1854–1912) was among the first to recognize the possible implications of curved spaces for physics. Attempting to explain the results of the 1887 Michelson–Morley experiment on the speed of light, he proposed that space and time were not constants but changed in relation to motion. Working along similar lines, Einstein developed special relativity in 1905 and general relativity in 1917. Special relativity stipulates that nothing in space is absolute and treats distance and location as relative concepts. There is still a need for an absolute, but now it is the speed of light. With general relativity, physics embraced multidimensionality and contemporary versions

[50] Procacci, commentary in *Great Age of Frescos*; Edgerton, *Mirror, the Window and the Telescope*, pp. 77–88, on the importance of Masaccio.
[51] Hockney, *Secret Knowledge*.
[52] Mazzuchelli, *Cronaca di Matteo Villani*, vol. VI, p. 49. Cited in Edgerton, *Renaissance Rediscovery of Linear Perspective*, p. 134.
[53] Julian Bell, "Almost alive," *Guardian*, October 25, 2008, *Review*, pp. 16–17.

of bosonic string theory incorporate up to twenty-seven dimensions. General relativity rejected the Newtonian concept of absolute space in favor of the Liebnizian notion of space as a relative concept. The Newtonian framework fits well with linear perspective, which also provides an absolute vantage point outside of any space from which to observe it. These formulations undergird modern notions of rationality and order. General relativity makes us reconceive the universe – and our own world – as a network of relationships that can be "seen" in different ways depending on the observer and his or her location and relative motion to others.

The rejection of traditional conceptions of space was equally pronounced in art, but for different reasons. Reacting in part to the development of photography and the realism it represented, Impressionists sought to present reality as they saw it. Surfaces, spaces, and their borders are accordingly suggested but not defined or directly represented. In their canvases, we see beyond, into and around surfaces and spaces and are made aware of the atmosphere through which we perceive them. One of the ways in which these effects are achieved is by applying colors in small, layered brush strokes. In Manet's *The Balcony*, Jonathan Crary writes: "Manet's painting takes us outside the stable circuit of visuality to an arrangement in which neither eye nor objects in the world can be understood in terms of fixed positions and identities."[54] Postimpressionists, beginning with Cézanne, sought to reduce reality to blocks of shapes and colors, mimicking the way they thought consciousness imposes cognitive order on the physical world.

Cubism broke entirely with linear perspective. Georges Braque and Pablo Picasso, Alexander Archipenko, and Jacques Lipchitz represented figures and objects from multiple perspectives on the same canvas or from the multiple vantage points in their sculptures. For Braque, the appeal of Cubism was "the materialization of that new space which I sensed." It was a "tactile space" in nature, the feeling around objects and terrain and between things. Cubism was research into space.[55] Picasso insisted that iconoclasm had to be dramatic and exaggerated to overcome visual conventions that were deeply embedded in the social structure and the minds of people.[56]

[54] Crary, *Suspensions of Perception*. [55] Quoted in Kern, *Causality*, p. 161.
[56] Kern, *Culture of Time and Space*, p. 208.

"Simultaneity" was explored more widely in poetry, music, and film, and in art by Cubist, Futurist, and Dadaist collages, where cut-out photographs and fragments of newsprint were pasted into drawings and paintings.[57] Influenced by "primitivism," Modigliani and Giacometti experimented with disfiguration. Giacometti went a step further and sought to break down the boundaries between figures and space. In his sculptures, figures are attenuated and eaten away, seemingly by elements from the surrounding space that have penetrated them. Building on Matisse and Derain, Fauvism also sought to create spatial ambiguity, as in Georges Braque's *Olive Trees* (1907), where it is achieved by reverse use of colors traditionally associated with foreground and background, the running together of objects and the cutting off of almost every form by the painting's borders.

The assault on traditional understandings of space accelerated in the postwar era. Francis Bacon, one of the most prominent postwar British artists, incorporated outside and inside views of the body in his portraits, violating our sense of layers and differentiated spaces. Mark Rothko, and Jackson Pollack pioneered the installation concept and sought to draw viewers into the universes created by their large canvases. In 1902, Georg Simmel insisted that art is enabled by self-containment. A frame intensifies the inner unity of the picture.[58] Gertrude Stein observed that with the advent of the Cubists, "the framing of life, the need that a picture exist in a frame, remain in its frame was over."[59]

Mark Rothko and Jackson Pollack refused to frame their canvases, insisting that their works expanded beyond the spaces which they filled. In those spaces, they also assaulted and played off traditional understandings of space. Pollack's paintings are devoid of forms and perspective; we search, without success, for stable points from which to organize and make sense of his canvases, only to give up and allow our by now disoriented selves to be drawn into a world of curves and colors and movement. Rothko's canvases often depict geometric shapes, but upon closer inspection it is apparent that these shapes are painted in a way to deny integrity to the surfaces and the shapes. So are their borders, which are not sharp but fuzzy. They create tension by

[57] Antliff and Leighten, *Cubism and Culture*, p. 51.
[58] Georg Simmel, "The Picture Frame," cited in Kern, *Culture of Time and Space*, p. 196.
[59] Stein, *Picasso*, p. 51.

playing off of our expectations that they should be firm and not bleed into the space that surrounds them. They confuse us further by creating controversy about their horizontal and vertical axes. Critics accused the Tate Modern of hanging Rothko's two *Black on Maroon* paintings the wrong way. The director of the Tate subsequently revealed that Rothko explicitly avoided giving instructions about how these canvases should be hung.[60]

Contemporary art has sought new ways to refigure space. Some artists engage directly with territories, boundaries, and politics. The "conspiracy art" of Mark Lombardi represents webs and network in the form of intricate patterns of curves and lines to illustrate, among other things, the Vatican's alleged involvement in the Iran–Contra scandal and links between global finance and international terrorism. In the aftermath of 9/11, FBI agents went to the Whitney Museum of American Art and asked to see a drawing of his on exhibit.[61] Mona Hatoum challenges our understanding of maps and territorial boundaries by pulling threads out of carpets to create loose and distorted representations of countries. Alghieri Boetti uses Afghan women to embroider maps according to different principles of conceptual overlay. Carlos Amorales, a Mexican artist, also creates web-like structures to disfigure maps and other representations of political and non-political spaces. His *Useless Wonder*, created in 2005, incorporates Mondrian-like figures to show how bizarre ordered forms appear in the kind of spaces he creates.[62]

Some of the artists involved in reconceptualizing space were undoubtedly aware of the breakthroughs of twentieth-century physics, but almost all of the artists associated with the reconceptualization of space in the late nineteenth and early twentieth centuries appear to have derived their visual inspirations from non-scientific sources. The Impressionists were influenced by Japanese art, particularly *ukiyo-e* (pictures of the floating world) wood-cut prints, and several had sizeable collections. Vincent van Gogh incorporated pictures of Japanese prints in his canvases and painted variants of them. The Cubists were

[60] Vicente Todoli, "Hanging Rothko," *Guardian*, November 15, 2008, p. 37.
[61] "The conspiracy art of Mark Lombardi," National Public Radio, October 19, 2008. www.npr.org/templates/story/story.php?storyId=1487185.
[62] Amorales, *Discarded Spider*, reproducing art displayed from September 2008 to March 2009 at the Lois and Richard Rosenthal Center for Contemporary Art, Cincinnati, Ohio.

influenced by African art and some collected African masks and sculpture. Pablo Picasso's so-called African period (1907–9) was inspired by the publicity accompanying French expansion in Africa and the importation to Paris and Brussels of African art. Futurism and the Bauhaus – two prominent artistic movements between the wars – worshipped technology but both built on modern, linear understandings of space. Picasso was adamant that Cubism grew out of earlier developments in art and had nothing whatsoever to do with mathematics, physics, or psychoanalysis.[63]

The best case that can be made for physics influencing art is in quantum mechanics and literature. Some novelists, among them James Joyce, Samuel Beckett, Alain Robbe-Grillet, John Barth, Vladimir Nabokov, and Kurt Vonnegut appear to have been influenced by the apparent violations of causality at the micro level of the universe, and some have acknowledged this connection.[64] Don DeLillo seems to adopt Niels Bohr's principle of complementarity in his novel *Libra*.

Art and politics interacted closely but in a more superficial sense. Nineteenth-century modernist artists, among them, Jacques Louis David, Thédore Géricault, Eugène Delacroix, and Gustave Courbet, engaged political controversies and scandals. Art sought to influence twentieth-century politics more directly and was influenced by it in turn. World War I and its consequences had profound consequences for the development of modern art in France, Germany, and the Soviet Union. The War also utilized artists for everything from camouflage to enlistment and war bond posters, as did the Russian Revolution and upheavals that followed.[65] Artists in turn have aspired to influence politics, and some works with political messages (e.g., Ben Shawn's *The Passion of Sacco and Vanzetti* and Picasso's *Guernica*) became left-wing icons. Picasso's *Les Demoiselles d'Avignon* (1907) offers a subtler critique of colonialism and its self-proclaimed civilizing mission; the Africanized prostitutes proclaim Cubism's primitivizing mission for Europe.[66] Art and artists also mobilized in support of fascism.[67] Art was used as a conscious vehicle to delegitimize elites or mobilize

[63] Pablo Picasso, "Statements to Marius de Zayas," (1923), quote in Kern, *Culture of Time and Space*, p. 147.
[64] Kern, *Causality*, p. 366. [65] Paret, Lewis, and Paret, *Persuasive Images*.
[66] Antliff and Leighten, *Cubism and Culture*, p. 46.
[67] Fogu, *Politics of History in Fascist Italy*; Antliff, *Avant-Garde Fascism*.

support for political movements and projects. It operated at the low end of my continuum.

In the Renaissance and early modern Europe the connection between art and politics functioned at the middle and even high end of the continuum. Visual frames become quickly accepted and naturalized, making it easier for political actors to adopt and adapt them for their own uses. The explanation for these differences, I believe, can be found in the emergence of the individual as an autonomous agent. This began as a project of philosophy and literature and was a catalyst for the visual revolution in science, art, and politics. Revolutions in these fields became mutually reinforcing and helped to accelerate the transformation of European identity.

Identity as a conceptual frame

The concept of the individual emerged only gradually from collective conceptions of identity based on roles.[68] It is evident in the writings of Renaissance philosophers, most notably Machiavelli (1469–1527), and later, in René Descartes (1596–1650), Thomas Hobbes (1588–1679), and John Locke (1632–1704). It reshaped art and how artists approached their profession. Individual style and success became a matter of paramount importance. Patrons paid and often competed for the work of masters. Artists vied with one another for worldly recognition and often regarded one another as rivals, as did the city states where they could be coaxed to work. Beginning with Cristoforo Landino and his *Apologia di Dante* (1481), commentators began to describe leading contemporary artists as "noble successors" to those who had preceded them.[69] Within their works, artists also began to differentiate individuals to a much greater extent than ever before. Sacred images had frequently been replicated over the centuries. Leonardo's unfinished *Adoration of the Magi* (1482) used different facial types and expressions and was widely recognized to have broken new ground in the way its characters were deployed to suggest their relationships with one another.[70] Michelangelo's *David* is another paradigmatic example. His body and pose resemble a pagan hero, but his face offers a

[68] Elias, *History of Manners*, vol. I; Taylor, *Sources of the Self*; Seigel, *Idea of the Self*.

[69] Goffen, *Renaissance Rivals*, pp. 10–11. [70] Ibid., p. 40.

sharp break with classical perfection. Its famous scowl suggests intense concentration and a roiled state of mind.

By the time of Locke, C. B. Macpherson writes, the individual was increasingly regarded as "the proprietor of his person and capacities." Society was reconceived as "a lot of free individuals related to each other as proprietors of their own capacities and of what they have acquired by their exercise."[71] The construction of the territorial state followed upon the construction of the individual. The parallels were not lost on rulers in the early modern era, who conceived of their political units as extensions of themselves. Louis XIV famously considered France his personal estate and *la gloire*, which reflected his prestige (*considération*) and standing relative to other leaders, as its appropriate end. "The love of *gloire*," he wrote, "surpasses all the others in my soul."[72] Louis XIV's idea of the state as a personal patrimony was widely shared by other rulers and prevailed up to and even past the French Revolution, although the conception of the ruler as the servant of the state made some headway.[73] It nevertheless made little difference in practice as rulers and most of their advisers saw "the glory of the state and its monarch" as roughly equivalent and their primary goal.[74]

In the late seventeenth century, the state began to assume an identity independent from its ruler. To the extent that the kingdom was conceived of as an entity in its own right, monarchs could no longer claim the state as property, but their more impersonal states could make more far-reaching claims on the loyalty and resources of citizens. In France, this transition took place during the course of the long reign of Louis XIV (1643–1715). Early depictions of Louis in literature and the plastic arts, portray him as Jupiter, Apollo, the sun, and famous heroes. He was compared to Solomon, Augustus, Constantine, Justinian, Clovis, and Charlemagne.[75] By the late 1680s, classical and mythical imagery and associations were on the wane, reflecting the general decline of antiquity as a cultural model in literature. Louis was increasingly represented in modern dress, in contemporary settings and

[71] Macpherson, *Political Theory of Possessive Individualism*, 3.
[72] Quoted in Lavisse, *Louis XIV*, pp. 134–5, and Elias, *Court Society*, p. 147.
[73] Swann, "Politics and the State in Eighteenth Century Europe"; Lynn, *Giant of the Grand Siècle*, pp. 251–4.
[74] Schroeder, *Transformation of European Politics*, p. 8.
[75] Burke, *Fabrication of Louis XIV*, pp. 12, 35.

surrounded by symbols of commerce, military might, science, and the productive arts. "French order" columns were designed for the Louvre in lieu of classical Ionic, Doric, or Corinthian ones.[76]

There was a corresponding change in the rhetoric of legitimacy. Mystical associations were on the wane as part of what Max Weber would later call the "disenchantment of the world" (*Entzauberung der Welt*).[77] The intellectual revolution of the seventeenth century, prompted by the works of Descartes, Galileo, and Newton, among others, encouraged people to view the world in mechanical, rather than organic terms.[78] The commitment by scientists to understand the universe as a rational, if enormously elaborate, machine in which each part had its place was reflected in the effort by political theorists to understand, if not construct, the state along similar lines. Demystified kings lost some of what Bourdieu calls their symbolic capital.[79] Not surprisingly, the symbolism invoked by Louis XIV and his advisers became more self-consciously rational, with the king portrayed as the indispensable cog in the machine or the source of its energy and direction.[80]

Michael Walzer observes that the state is invisible and must be personified before it can be seen and symbolized to be imagined. Symbolization does not create unity, but units of discourse "around which emotions of loyalty and assurance can cluster."[81] Encouraging citizens to identify with and take pride in their nation and to regard the monarch as its embodiment, requires courts, palaces, public squares, and new or renovated capital cities. As with Louis XIV, art, architecture, literature, and ritual were often manifestations of a coordinated and carefully supervised strategy to shape perceptions of monarchs at home and aboard.[82] These projects can also be understood in less personal terms as efforts to create the roles and symbols critical to a centralizing state.

Linear perspective, I noted earlier, was only one feature of Renaissance art. Another important innovation was in the representation

[76] Ibid., pp. 126–7; Blanning, *Pursuit of Glory*, pp. 428–40.
[77] Weber, "Science as a Vocation."
[78] Archambault, "Analogy of the Body in Renaissance Political Literature"; Kantorowicz, *King's Two Bodies*.
[79] Bourdieu, *Language and Symbolic Power*, pp. 75–6, 163–70.
[80] See Burke, *Fabrication of Louis XIV*, for examples.
[81] Walzer, "Role of Symbolism in Political Thought."
[82] Shils, *Center and Periphery*; Eisenstadt, "Communication Patterns in Centralized Empires"; Burke, *Fabrication of Louis XIV*, pp. 39–45, and 158–65; Blanning, *Pursuit of Glory*, pp. 207–17.

of people. Many Renaissance portraits were commissioned to assert or advertise their sponsors' status and authority. In Gerlach Flicke's portrait of Thomas Cranmer, Master John's of Queen Mary I, Hans Epworth's of Mary Neville and her son, and Marcus Gheeraert's of Queen Elizabeth I, subjects wear jewelry and expensive clothing and furs and are surrounded by other trappings of power and wealth. Their hands display rings and show no signs of physical labor. Their faces are composed and aloof. This style of portraiture reached its apotheosis in Anthony van Dyck's 1633 portrait of Charles I, which shows him in armor on horseback and riding through a triumphal arch.

Some artists, among them Leonardo, Rembrandt, Parmigianino, Titian, and Rubens, began to depict what they considered as unique about the visage, body, and character of their subjects. The two styles were combined in *Isabel of Naples*, conceived by Raphael but executed by Giulio Romano, and in Raphael's portrait of *Pope Julius II* (1511–12), which hangs in London's National Gallery. The pope's clothes, jewels, and markers of rank are sharply outlined and exquisitely detailed, and are used to provide a sharp contrast to the slouching, aged, and more loosely defined figure they adorn. Julius had been an energetic pope notorious for his temper. Raphael portrays him at the end of his life, and in a sharp break with tradition, portrays him in a reflective mood, pondering perhaps his physical frailty or the expected impermanence of his notable political and administrative accomplishments. Julius appeared so real to contemporaries that Giorgio Vasari (1511–74), the great art historian of the era, used the verb *temere* (to fear) to describe the response of those who viewed the painting.[83]

The cinquecento also witnessed a novel fascination with self-portraits. In part, this reflected the rising status of artists, who were no longer regarded as mere craftsmen, but important personages in their own right. Leonardo drew himself in old age, emphasizing his wrinkles and meditative state. Raphael's portrait of himself as a young man portrays him as a cultured gentleman interacting with philosophers and other prominent ancient figures in his *School of Athens* fresco. In his *Last Judgment* in the Sistine Chapel, Michelangelo depicted himself as St. Bartholomew, a shabbily dressed beggar with flayed skin. Parmigianino, as noted, used his portrait to display his extraordinary technical skill. Titian and Rembrandt produced a series of self-portraits that

[83] Goffen, *Renaissance Rivals*, p. 194; Nesselrath, "Raphael and Pope Julius II."

show their transition from expectant and confident youths to vigorous and wise old men unafraid of death. The style traveled north of the Alps later in the century and is evident in the portraits of Albrecht Dürer, who emulated what he described as the new emphasis on preserving "the likeness of men after their death."[84]

Literature underwent a parallel evolution. Petrarch's highly introspective poetry speaks of his struggle to free himself from the passion of love. His *Secretum* (My Secret Book) is an intensely person and guilt-ridden dialogue with Augustine. Spenser, Marlowe, and Shakespeare began to forge a new relationship between literature and identity. Spenser and Marlowe place their characters in situations where their individuality comes to the fore and explore identity as the joint product of social influences and self-fashioning. Self-naming is an important feature of their plays. In Shakespearean tragedy, we encounter characters like Hamlet, whose rich but troubled mental lives help drive plots forward. There was still no real autobiography and little private testimony as the sixteenth-century inner voice is not yet strong enough to generate such a narrative.[85] Montaigne's essays are a possible exception as he was intent on conveying a sense of who he is and claims not to have omitted any of his memories as that would violate the logic of selfhood.[86] In Hamlet's soliloquy, we get a strong sense of interiority as we do with Cordelia's insistence on speaking her own voice in lieu of playing a socially appropriate role. In Shakespeare, as in Machiavelli, there is a renewed emphasis on agency and fortune. In the Bard, it is tempered by pessimism about the traditional concern about divine justice and the emerging commitment to meaningful agency.[87]

In the seventeenth and eighteenth centuries, the inner self is more developed and explicitly revealed in the tragedies of Corneille, Racine, Schiller, and Goethe. Autobiography was made popular by Rousseau and Franklin, although the term was not coined until 1809.[88] Other forms of writing became more personal.[89] In his account of the Hebrides, James Boswell describes island features primarily in terms of the impressions they made on him.[90] Nineteenth-century literature,

[84] Strieder, *Dürer*, p. 142. [85] Lyons, *Invention of the Self*, pp. 40–54.
[86] Montaigne, *Essays*; Olney, *Metaphors of Self*, pp. 51–88; Greenblatt, *Renaissance Self-Fashioning*, pp. 84–7.
[87] Elton, "Shakespeare and the Thought of His Age."
[88] Lyons, *Invention of the Self*, p. 55. [89] Ibid., pp. 55–74.
[90] Boswell, *Journey to the Hebrides*.

philosophy, and art are even more interested in individual character and some novels verge on the autobiographical. Writers and artists speak about their inner lives and voices to which they give rise, a phenomenon many found unsettling. For Wordsworth, this voice was "a presence that disturbs me," for Shelley, an "unseen power," and for Baudelaire, a "luminous hollow."[91] By the end of the century, Oscar Wilde could convincingly assert, as Herder had more cautiously at that century's outset, that "All artistic creation is absolutely subjective."[92]

In our era, mathematics, science, art, and politics can all be described as expressions of modernity. The kinds of developments we have witnessed in these domains are hard to imagine in the absence of the emergence of the individual and other characteristic features of modernity.[93] These developments are not only expressions of modernity, but have helped negotiate it. Modern art introduced changes in portraiture as radical as those of the Renaissance. The focus on the inner lives of subjects remains, but those inner lives have increasingly become symbolic of the anomie, discontent, confines, or banality of modern life. This is evident in the portraits and sculptures of artists as diverse in style as Gustav Klimt, Pablo Picasso, Egon Schiele, Käthe Kollwitz, Georg Grosz, Francis Bacon, and Lucian Freud. Some of these artists struggled to define new identities for themselves, and by extension, for people more generally. In the Renaissance and early modern Europe portraits negotiated and recorded emerging values and practices. Modern portraiture, by contrast, most often rebels against these values and practices.

It seems unlikely that scientific and artistic developments in and of themselves can bring about major shifts in political thinking and practice. Like philosophy and literature, science and art can at best provide a language to help others describe and understand political phenomena, envisage new forms of structure and behavior, and frame and justify projects to bring them about. What they do not provide, as the history of modern art demonstrates, is the incentive to formulate these projects. This must come from the outside, as it did in the Renaissance and early modern Europe with the emergence of the autonomous actor as the dominant form of identity.

[91] Quoted in Gergen, *Saturated Self*, p. 20. [92] Wilde, "Critic as Artist."
[93] Yack, *Fetishism of Modernities*, pp. 32–5, for the distinctive characteristics of modernity.

The relationship between art and politics is further complicated by the apparent lack of one-to-one correspondence between changes in identity, art, and political practice and its associated spatial forms. The emergence of the individual was not the only change in identity since early modern Europe, and it has been more of a gradual evolutionary process than a sharp transition or break with the past. As late as the beginning of the early twentieth century, leading intellectuals in Europe and North America expressed astonishment at the rapidity with which traditional forms of association and behavior were breaking down leaving the individual free to make choices that were not available or acceptable in the past. Robert Musil, who wrote one of the century's great novels on the theme of how this transformation deprived people of identities, observed in retrospect that "sharp borderlines everywhere became blurred, and some new indescribable capacity for entering into hitherto unheard-of relationships threw up new people and new ideas."[94] The most famous assertion in this genre is Virginia Woolf's claim that "on or about December, 1910, human character changed."[95] She was deeply involved in the Paris art and literary scene and found striking parallels in the radical changes in the creative world and everyday changes in behavior, from taking liberties in grammar to doing the same in relations between husbands and wives, parents and children and masters and servants.[96] Neither Musil nor Woolf maintained that there was any causal relationship across these domains. This kind of argument has almost always been the preserve of conservatives who attempt to arouse public support against novel forms of artistic expression (e.g., Cubism, Stravinsky, rock 'n' roll, rap) by charging that it is corrupting of morals.

We observe parallel changes in science, art – and behavior, if we buy the argument of Woolf and a score of other prominent intellectuals of the period – but not in politics. There was nothing playful, subversive, or inside-looking about the burgeoning administrative arms of government – quite the reverse. And at the very moment when the world seemed to be changing and the bonds of individual identity everywhere loosening, those of political identification were tightening. Nationalism was on the rise in Europe, and Musil, who set his novel in August 1913, knew that it would instantly trump other identities for almost

[94] Musil, *Man without Qualities*, I, p. 62.
[95] Woolf, "Mr. Bennett and Mrs. Brown," p. 96. [96] Ibid.

everyone the moment war broke out. Nationalism is inseparable from the territorial state. The latter made the former possible and territory remains the goal of nationalities not already in possession of it, or of territory they consider part of their national patrimony.

War was largely unexpected in 1914; talk of the inevitability of World War I is almost all ex post facto.[97] More Europeans appeared to regard themselves as part of a wider culture that was increasingly bound together by the interchange of goods, people, and ideas. The level of globalization reached by Europe in 1914 was not equaled again until late in the twentieth century.[98] Even Schengen is nothing new. Britain and the Scandinavian countries never had passports, and France stopped requiring them in 1843. Globalization and openness came to a screeching halt in 1914, making it an intriguing exercise to consider what the path of European development might have been in the absence of a continental war.[99] As globalization advances, it is conceivable that those interested in formulating more cosmopolitan identities might find the spatial revolutions in science and the arts a useful resource and mechanism for change.

We have been given a second opportunity at globalization. This time around there is some hope that education, travel and greater economic and political interdependence will succeed in breaking down, or at least loosening, the hold of national identities. Such a transformation might draw on new visual forms to help legitimate and express itself. Let me offer some thoughts about how this might occur. Modernity brought role differentiation in its wake. Modern people are expected to perform a variety of roles arising from their commitments or associations with friends, partners, families, colleagues, religious, and political and social and affiliations and interests. Each of these roles creates an identification to which the individual can feel varying degrees of attachment. Some of these identities are political and have a territorial basis (i.e., city, region, country, continent, or transcontinental culture). Nationalism demands that national identification trumps all others, and for some people in some states this claim of loyalty has been realized. Nationalism is inseparable from territory, and those without territories of their own (e.g., Kurds, Palestinians) are keen to control lands they claim.

[97] Lebow, *Forbidden Fruit*, ch. 1.
[98] Daudin, Morys, and O'Rourke, "Europe and Globalization."
[99] See Lebow, *Franz Ferdinand Lives!*, for contrasting counterfactual narratives.

In parts of the post-industrial world nationalism is beginning to lose its hold over people. More sophisticated Americans are moving beyond it as a primary identification. National identity is merely another identification, and one whose meaning has evolved away from Fourth of July, lump-in-the-throat patriotism. A growing minority of Americans regard flag waving and posters proclaiming "These Colors Don't Run" as no less dangerous than guns, smoking, eating fatty fast foods, and driving under the influence of alcohol. This kind of change is even more evident in Western Europe, where for many people national identities coexist more comfortably with regional and supranational ones. Multilingual business executives and academics have typically worked in several countries and may well partner with someone who did not grow up in their native land. Cosmopolites on both sides of the Pond may strongly identify with a professional culture that transcends traditional national and racial divides. The opposite is, of course, true for people, many of them less educated and well-off, who feel marginalized by political, economic, and social change.

In the eighteenth century, the aristocratic elite was united by marriage and language. Its members spoke French; many did not know the local language. They married across borders and not infrequently worked as diplomats or soldiers for countries with which they had no prior association. Their political, intellectual, and social affiliations were more horizontal (class based) than vertical (national). This cosmopolitanism all but ended with the rise of nationalism, which reoriented even aristocratic loyalties on a vertical basis.

The noise made by right-wing, racist political parties, skinheads, and neo-nazis in Europe and patriotic evangelicals, the gun lobby and the Tea Party in the US should not blind us to the fact that nationalism is in decline in Western Europe and North America. The visibility and extreme nationalism of these parties and groups can be read as a reaction to the increasingly cosmopolitan orientation of mainstream European and American opinion. In part, this reflects the globalized nature of the developed world, growing travel, and study in countries other than one's own, immigration and the emergence of increasingly powerful horizontal networks that are coming to challenge vertical ones. Jerrold Seigel argues that one of the defining features of modernity is the novel interplay of horizontal and vertical networks. New networks, organized in terms of professions, markets, state structures, and the republic of letters, made it possible for people to break free

of traditional religious and social constraints and the telos human institutions were expected to serve. Largely middle-class networks fostered bourgeois values and practices and accelerated the demise of the old order. Many of these networks were vertical, and had to assert their independence from church and state. They were also horizontal in their ability to reach across traditional geographical, political, class, religious, and educational boundaries to incorporate people and develop in ways to serve their own ends. Both developments were fueled by new networks of communication and travel.[100]

Nationalism was a product of vertical networks and successfully shut down or weakened some horizontal networks. I noted the decline in aristocratic marriages and mobility across frontiers. With the rise of nationalism, many religious and ethnic groups confronted new national barriers, and some of them new internal ones. In the second half of the nineteenth century, European Jews were excluded from many political, economic, professional, and cultural institutions, and compelled, especially in Germany, to create parallel institutions of their own. At the other end of the spectrum, science and medicine became more international due to an increasingly dense communication network built around correspondence, reports, journals, and conferences. To a lesser extent this was true of socialism, which produced national movements with strong international links. These horizontal networks would largely disappear after war broke out in 1914. Even science was regulated to some degree by the state, and cross-border communications became problematic.

The second half of the twentieth century, and even more the early decades of the twenty-first, have witnessed a gradual but accelerating shift in the balance between vertical and horizontal networks. The former are becoming weaker and the latter stronger. In Western Europe, a new cosmopolitanism is recreating horizontal affiliations and the group of people associated with it are not a class into which entry is restricted. Education, economic growth, and travel could swell their ranks and make such a group, that is now economically and intellectually influential, politically powerful as well. In these circumstances, identity could become even more divorced from territory and its associated national affiliations. Visual frames borrowed from the arts could help define, establish, and propagate post-national identities.

[100] Seigel, *Modernity and Bourgeois Life*.

Conclusions

I suggest that identities and cognitive frames of reference can be arrayed along a continuum with regard to their causal consequences. The identities and frames with the least likely causal consequences are those consciously mobilized to sell policies or projects. At the other end of the continuum are identities and frames that have become so "naturalized" that they are taken for granted and had the effect of making some kinds of behavior or responses all but inevitable and others all but impossible as they were difficult to imagine.

Linear perspective in the Renaissance appears to have begun at the low end of the continuum and over the course of time worked its way up toward the high end. Evidence of its naturalization is found in later attempts by art historians, psychologists, and optical scientists to describe it as a scientific advance that represents the world as it actually is, or at least how we see it. Further evidence comes from the resistance that other forms of representation meet. Medieval art strikes many people as visually primitive and modern art's efforts to violate and go beyond linear perspective met considerable hostility at the outset and have only limited appreciation today. It is not an exaggeration to claim that linear perspective, and the broader concept of the straight line, in which it is embedded, have become part of the bedrock of Western culture. We conceive of the straight line and the linear perspective to which it gives rise, not only as the proper manner for two-dimensional representations of three dimensions, but as the normal path for human lives, institutions, and projects. We recognize variance in the form of curves, the dialectic, and chaos, for example, but they are measured against the template of linearity. Remarks like Bertolt Brecht's claim that "the shortest line between two points may be a crooked one" strike us as counterintuitive and amusing.[101]

The modern transformation of space in mathematics, physics, and art has not had the same impact on our culture because its appeal has been limited to a small, educated elite. It is at the low end of the continuum of constitutive causality. Its linkage to political projects is purely metaphorical. Linear perspective, by contrast, provided a central spatial frame of reference for the territorial state. It may have originated as metaphor; it was used in this way by a wide range of rulers

[101] Brecht, *Life of Galileo*, p. 328.

in early modern Europe, including Louis XIV, to buttress their claims for more comprehensive authority over the territories they considered part of their patrimony. It subsequently penetrated Western culture to the point where Ruggie thinks it reasonable to postulate it as a possible cause of the territorial state. Following Panofsky's lead, I have considered the possibility that linear perspective and the territorial state were both expressions of a deeper, underlying transformation. I have associated this transformation with the emergence of the individual identity, and treat the concept of sovereignty as another manifestation of this identity, but at the state level.

What accounts for these differences between the two visual revolutions and their political consequences? I offer three propositions. First, and foremost, is the difference noted above between the Renaissance and modern spatial revolutions. The former was part and parcel of a broader, fundamental transformation of European culture. The mechanism of linear perspective gave expression to and helped instantiate this transformation. This reciprocal relationship strengthened its hold over the minds of people, and not just members of the elite. Nothing similar has happened with the modern spatial revolution. There is no evidence that it is part of any broader transformation of identity, although I identified a scenario under which this might become possible. In the absence of some process of identity transformation, the mechanism of non-linearity is largely dormant in its effects.

Second, is the very different receptions these spatial revolutions received at the outset. Linear perspective was embraced by political and religious authorities; both exploited it for their own ends. Giotto, Duccio, Masaccio, Brunelleschi, and Leonardo developed linear perspective in frescos and paintings they did in churches. They were employed by popes, bishops, private individuals, guilds, or cities who valued their masterpieces as means of glorifying the deity and conferring standing on them as sponsors. The modern spatial revolution was opposed from the outset by state authorities and official representatives of high culture. Beginning with Edouard Manet, Impressionists were excluded from the French Academy, and did not become acceptable to the establishment until the twentieth century. Cubists were rejected on artistic and political grounds. Postwar expressionism remains an elite taste and public outlays on modernist and postmodernist art and sculpture often encounter public opposition, and not just in the US, unless they genuflect in the direction of kitsch. Something similar happened in

science. The British physics community was initially opposed to relativity – Eddington an important exception – for fear the German Einstein would dethrone the English Newton. Lenin rooted his understanding of Marxism in linear perspective and fiercely opposed relativity as well as non-conformist art and photography.[102] The Nazis condemned aesthetic modernism and Hitler attacked Dadaism, Cubism, and Futurism as "primitive forms of expression."[103] Stalin and his successors had equally plebian taste in art; socialist realism was imposed by fiat, and modernists, while they no longer faced the danger of execution or the Gulag after Stalin's death in 1953, continued to be discouraged and oppressed.

Non-linear art, literature, and film remain elite preoccupations. In the early 1950s, the *New Yorker* ran a famous cartoon featuring three men in an art museum, each representative of a different class and standing in front of a different painting. Entitled, "High brow, middle brow and low brow," it showed the best-dressed man looking at abstract art, the middle-class man looking at representational art, and the worker looking at a nude.[104] In the 1990 Cincinnati trial of photographer-artist Robert Mapplethorpe, the trial judge could only find one member of the jury pool who had ever attended an art museum; she was excluded from the jury on the grounds that her knowledge of art would constitute "an unnecessary burden."[105] By contrast, the works of art that pioneered linear perspective were readily accessible to ordinary people and very much appreciated by them, judging from the contemporary reports of Vasari and others. Many citizens developed the same kind of pride from the beautification of their city through churches and their art that their sponsors did. Unlike their modern counterparts who may never set foot in a museum if it is not part of a school trip, many of these burghers were frequent visitors to churches. Frescos on their walls were admired and linear perspective rather rapidly entered the mass culture of its day.

[102] Kern, *Culture of Time and Space*, pp. 134–6; Neumaier and Voorhees, *Beyond Memory*, p. 33.

[103] Griffin, *Modernism and Fascism*, pp. 27–8.

[104] The reference is to a much discussed article by Russell Lynes, "Highbrow, Lowbrow, Middlebrow," in the February 1949 issue of *Harper's*, of which he was the managing editor. Two months later, *Life* magazine published a chart of American tastes ranging from highbrow to lowbrow. It subsequently became a party game to divide cultural artifacts, activities, and people into these categories or the subcategories that proliferated.

[105] Abramson, *We, the Jury*, pp. 21–2.

Third is the extent to which elites adopt new spatial forms as vehicles for framing or advancing projects of their own. This appears to be an important enabling mechanism in this case. Renaissance paintings that incorporated linear perspective were much admired, providing further incentives for those interested in gaining or displaying status to sponsor them. Of equal importance, linear perspective became the handmaiden of other projects, most notably the development and justification of the territorial state. Whether it helped create this project or was simply mobilized to help bring it about remains a matter of controversy, but there can be no doubt that it played at least the latter role. State building provided another vehicle for its propagation and ultimate naturalization. Nothing similar has happened with the more recent spatial revolution. Efforts by artists to employ such perspectives on behalf of the Bolshevik Revolution were soon quashed and they have remained in political and cultural limbo ever since. The two, of course, are not unrelated.

The relationship between art and politics, and the mechanisms and processes that might link them, is complex and raises fascinating substantive and conceptual questions. I have tried to show how we need to look beyond the limited domain in which we routinely search for explanations for key political developments. Cognitive frames of reference, like linear perspective, have causal consequences in proportion to the degree that reflect deep-seated cultural orientations. In an open-ended world, the extent of connections between these orientations and behavior is hardly surprising but remains largely unexplored. Inefficient causation can provide a means of illuminating these connections and thereby broaden our understanding of international relations.

5 *Cause and knowledge*

I would rather discover one cause than gain the kingdom of Persia.

Democritus[1]

The concept of cause is deeply problematic, logically and empirically. It is not a feature of our world, so does not map well onto it. It is nevertheless a concept we seem unable to do without. It has become an essential feature of social science, and we routinely use our imperfect understandings of it to explain and forecast. With these ends in mind, I formulated a new approach causation that I believe more appropriate to the study of international relations. I demonstrated its utility in a case study of the rise of the territorial state. Here, I review my theoretical arguments and empirical findings. I then situate inefficient causation in the debate about cause in philosophy of science. Finally, I consider the relationship between cause and knowledge. How much should social science focus on searching for causes, given the near impossibility of establishing causal connections in the social world?

Causal misunderstandings

There is a widespread belief among social scientists that knowledge of cause is central to, if not the equivalent of, knowledge. In theory and practice, this assumption is questionable. Some physicists, as in certain branches of quantum mechanics, have dispensed altogether with cause. In the social sciences, much lip service is paid to cause. However, positivists of various shades generally ignore it, restricting themselves to a search for association in the belief that it will enable prediction. Qualitative researchers, many of whom reject positivism, take cause more seriously and try to establish it through process tracing. Other important approaches in social science that are well represented in

[1] Democritus, frag. 8.

international relations downplay, finesse or ignore cause as a research objective. This is arguably true of some practitioners of formal modeling, simulation, critical theory, and feminism.

Humeans equate constant conjunction with cause, but many philosophers reject such a "thin" understanding. Beginning with Hume's contemporary Reid, they raise the objection that constant conjunction cannot distinguish true causal associations (e.g. increase in pressure on a gas is followed by a rise in its temperature) from spurious ones or meaningful associations from mere conventions. For this reason, philosophers of science have turned to laws, causal mechanisms, or causal properties to develop thicker accounts of cause. I analyzed several of the leading alternative approaches in Chapter 1 and their applicability to international relations in Chapter 2. These include regularity theories, Hempel's deductive–nomological approach, Kantian causation, process models, and scientific realism.

There is a grand irony in the evolution of understandings of cause in the modern era. It began in early modern Europe with rejection of Aristotle's four-fold typology of cause to simplify the concept of cause and make it more useful to science. This pruning away reached its zenith with Hume's reduction of cause to mere association. From the beginning, philosophers found fault with the equation of cause with constant conjunction and responded in two diametrically opposed ways. Some, like Russell and Wittgenstein, considered the concept of cause so logically and empirically inadequate to urge its abandonment. Other critics are reluctant to throw out the causal baby with the recognizably muddied bathwater and want to buttress regularities with additional understandings or go beyond them to thicker understandings of cause. By this means they hope to address the by now well-known logical problems of regularity theories and their empirical failure to account for key categories of causal events.

The turn to thicker notions of cause led to a proliferation of formulations. Most rely on unobservables in the form of mechanisms or causal powers, things Humeans dismissed as metaphysics. The only way to pursue the Humean project is to explain regularities with reference to deeper regularities, but this merely pushes back a level the problem of distinguishing between causal and other kinds of associations. All thicker formulations go beyond efficient cause and engage cause metaphysically. Critical realism, with its emphasis on the inherent capabilities of things, returns to Aristotelian categories rejected

in early modern Europe. The Kantian formulation, while not in any way Aristotelian, is just as metaphysical in its invocation of noumenal worlds. The quest for simplification has, in effect, come full circle as contemporary formulations build on complex, multifaceted definitions and layered understandings.

The early modern philosophers who chipped away at the Aristotelian framing of cause were inspired by Bacon and Newton and believed that science could produce a comprehensive understanding of the world. They wanted a conception of cause conducive to this project and its extension to the social world. In light of the clock-like, mechanistic model of the universe that became dominant in the eighteenth century, efficient cause appeared to be the most useful of the Aristotelian categories. It was gradually refined until it found its most formulaic expression in Humean constant conjunction. The recent move away from thin understandings of cause is in part a response to their logical and empirical problems, but more fundamentally reflects the rejection of mechanical and deterministic understandings of the universe. Today, the universe is considered indeterminate and even weird at the quantum level. At the macro level, there is widespread recognition that most interactions are non-linear, and many too complex to predict. To make sense of the world, we must stretch, deepen, and expand our notions of cause or abandon them altogether.

There is another irony to consider. From Francis Bacon on, philosophers sought, without notable success, to influence science. In the early modern period, there was considerable interaction between the two fields, in part because many scientists were also philosophers. Science has consistently had more impact on philosophy. Scientists march to their own drummers, although sometimes find useful efforts by philosophers to clarify problematic concepts. The larger philosophical enterprise of providing truth warrants for science – the avowed goal of the Vienna Circle – came to naught. One reason for this is that multiple understandings of cause have emerged in science and vary across disciplines, even their subfields. More important is the understanding shared by many scientists that their enterprise is as much a practical art as a logical exercise. It is above all an ethical practice. Truth claims are provisional and established not by reference to any logically derived set of procedures or tests, but by correspondence with what leading scientists consider good scientific practice. These understandings are frequently challenged and evolve in response to critiques and new

conceptions and technical possibilities. This process ultimately depends on the principles of openness and fairness, especially by gatekeepers, to use psychologist Kurt Lewin's term for those who control access to funding, publication outlets, and jobs.

Cause and international relations

The problem of cause is even more intractable when we turn to the social world where constant conjunctions are all but non-existent and associations partial at best. In international relations, the tightest associations are invariably trivial (e.g., declarations of wars followed by violence, arms races by increased tensions, integration of states by supranational bureaucracies). Sometimes these regularities are demonstrably non-causal as is the widely publicized association between peaceful relations and countries that possess McDonald's franchises. Other regularities, like the Democratic Peace, are read by some scholars as causal, and by others as covariation attributable to deeper causes. Bill Thompson, for one, argues that democracies are peaceful because they are developed countries, and, after World War II, almost all developed countries not part of the Soviet bloc were members of the Western alliance.[2] Most regularities are not very useful for purposes of prediction, because they account for only a small part of the variance, tell us nothing about individual "cases," and are readily undermined by knowledge about them.[3]

Causal regularities can sometimes be distinguished from non-causal ones by counterfactuals. Even this test is problematic, as Hidemi Suganami has shown.[4] Regularities are only useful for purposes of prediction when the features that sustain them are present in the situations to which they are applied. It is still hit and miss, because other features of context, which have not been controlled for, can prove determining. Regularities are descriptions of a particular kind of relationship between event types, in which all – or at least, most – other features of context are reduced to the error term. This allows for simple comparisons: the presence and absence of the "variable(s)." This approach encourages us to treat situations that may be different in important

[2] Thompson, "*Democracy and Peace.*"
[3] See Chernoff, *Power of International Theory*, for the case for prediction in foreign policy.
[4] Suganami, *Causes of War*, pp. 128–34.

ways as comparable "cases." This problem is endemic to large N studies and cannot be solved by multiple regression analysis, as attempts to control for large numbers of variables lead to negative degrees of freedom.

In international relations, DN is a non-starter. There are no general laws that can be used to validate regularities. DN, moreover, relies heavily on falsification. In Chapter 1, I noted some of the logical and empirical difficulties with falsification and how it is rarely the reason why scientists abandon propositions or theories. In social science, falsification is even more difficult because all theoretical terms (e.g., power, balance of power, democracy) are pure reifications, making any consensus about their definition, operationalization, and measurement impossible.[5] Prominent political scientists and international relations scholars nevertheless continue to embrace falsification as the essential means of testing propositions and theories.[6]

There is another problem endemic to the study of international relations. Key concepts are often defined in ways that encourage false confirmation. Deterrence theory is a case in point. During the Cold War, deterrence failures were never attributed to the failure of deterrence as a strategy of conflict management, but continually to the alleged failure of defenders to practice it properly. Khrushchev's 1962 decision to secretly deploy missiles in Cuba was understood by officials, journalists, and scholars to be the result of Kennedy's supposed failures to stand firm on Laos, Berlin and Cuba. Decades later, Soviet documents and interviews with former Soviet officials and the Castro brothers later made it apparent that Khrushchev deployed the missiles secretly – rather than openly as the Castro brothers pleaded with him to do – because he had an exaggerated respect for Kennedy's resolve. He was convinced that the President would have sent the navy to intercept, even sink, Soviet ships carrying missiles to Cuba.[7]

Immanuel Kant insisted that events take place in space and time, and that many of our intuitions about the world arise from a priori categories of the mind. Cause cannot be established through Humean-style induction, he argued, because such claims lack strict universality or necessity. Nor can it be established through pure reason because it

[5] For a sophisticated counter-argument, see van Fraassen, *Empirical Stance*.
[6] King, Keohane, and Verba, *Designing Social Inquiry*; Vasquez, *Power of Power Politics*.
[7] Lebow and Stein, *We All Lost the Cold War*, ch. 3.

has the potential to produce dogma. We must explain events in terms of categories and associated concepts, and they do not come into being through analysis but from intuitions that precede experience. To square this circle, Kant theorized that our intuitions are often in accord with nature.[8] Warrants of causality demand transcendental justifications that subsume empirical observations to universal and absolute rules.

Kantian causation looks beyond efficient cause to simplified, abstract worlds to generate law-like statements to order our understanding of the empirical world. In physics, this approach is used to account for equilibria and many kinds of phase transitions. Kantian causation is common in international relations theory, but rarely, if ever, acknowledged as such. In his theory of international politics Kenneth Waltz insists that the balance of power and polarity are "theoretical entities" that must not be reified, but they are total reifications, and nothing more than abstract idealizations. Waltz's theory, whether he recognized it or not, is Kantian in its creation of transcendental worlds of multi-, bi-polarity, and hierarchy that are used to generate propositions applicable to empirical worlds. Any kind of theorized equilibrium or repetitive state is Kantian. Mearsheimer's formulation of realism builds on such an equilibrium – the balance of power – but, implicitly also relies on causal powers. Powerful states are considered more likely to initiate wars than weaker ones.

Kantian causation encounters more difficulties in international relations than it does in physics. In regional and international systems, unlike many of their physical counterparts, there is no demonstrable tendency toward equilibrium. A balance of power – most commonly considered a commitment by major powers to preserve the territorial status quo – is by no means the historical norm. Bandwagoning appears about as common as balancing.[9] Prominent realists – Gulick, Morgenthau, Schroeder, Kissinger – recognize that a balance of power is most likely to form and function when relevant actors are committed to preserving the system and use the balance toward this end.[10] The turn to

[8] Kant, "Transcendental Aesthetic," A81/B107, A90/B122, A545/B573 and *On the Form and Principles of the Sensible and Intelligent Worlds*, §4, 2:293 for the quote.

[9] Kaufman, Little, and Wohlforth, *Balance of Power in World History*, pp. 229–30.

[10] Gulick, *Europe's Classical Balance of Power*; Morgenthau, *Politics among Nations*, p. 195; Kissinger, *World Restored*; Schroeder, *Transformation of European Politics*; Wight, *Systems of States*, pp. 23, 149.

political culture to explain when and why balances of power form and work, while admirable from a constructivist perspective, nevertheless undercuts the claim that a balance is in any way universal.

For Kant, causation was a necessity and, although a product of the human mind, considered to reflect the structure of the world. This supposition finds little support in the physical or social world. Morgenthau, who recognized this failure, treats the balance of power as more of a Weberian ideal type than a Kantian form, and one, moreover, with normative as well and empirical implications. He conceives of the balance of power as a rational solution to anarchy, not a mechanism with predictive value. It is a starting point for narratives to explain why balances of power have, or have not, formed and have, or have not, kept the peace. Most international relations theorists and formal modelers do not frame their projects this way and tend to mistake the ideal types they create for actual representations of the world.

Scientific and critical realism improve on regularity theories by taking so-called unobservables seriously. They emphasize the determining roles of laws, structures, and mechanisms we cannot directly observe or manipulate, what Bhaskar calls "intransitive objects of knowledge." They reject as epiphenomenal all surface forms, including the regularities for which positivists search, and the human experiences that are the starting point for constructivists. Underlying entities, structures, and mechanisms are responsible for the natural complexity we observe in the physical and social world, and are considered features of these worlds, not creations of the human mind. Scientific realism insists that we grant ontological equality to agents and structures. Society molds individuals, but is distinct from them, just as individuals are from society. Neither the international system, nor states or societies can be understood in terms of their component parts. In contrast to reductionist approaches, scientific realism emphasizes the importance of emergent properties: patterns that are products of interactions by agents at lower levels of social aggregation that cannot be predicted or explained by studying these interactions. Scientific realism's ontology makes it essential for its advocates to develop a system of mediating concepts that explain the interactions of agents and structures, and recently, some work has been directed to this problem.[11]

[11] Dessler, "What's at Stake in the Agent–Structure Debate"; Wendt, "Agent–Structure Problem in International Relations."

By defining objects and their causal powers as natural kinds, scientific realism claims to be scientific and to avoid the subjectivism of constructivism. Its proponents among international relations theorists hold firm in their belief in the causal powers of things.[12] I am unconvinced. Almost everything to which scientific realists attribute causal powers (e.g., armies, societies, states) are social units, not natural things. Unlike temperature, a theoretical construct that refers to something real (i.e., the energy level of atoms and molecules), political concepts are abstractions all the way down. States are real in the sense that they, unlike the balance of power, have institutional existence. For this reason, the powers of states, and our conceptions of them, have evolved enormously over time and differ significantly from state to state at any given moment. The closest we come to natural kinds in the social world are individual human beings and they possess so many and so varied capabilities that human nature is all but useless for purposes of prediction.

Inefficient causation

Cause is an intractable problem, not only in international relations, but also in all the social, biological, and physical sciences. I have no solution to offer. However, I make two moves that I believe beneficial to the development of international relations theory. The first is to argue that many of the most important and interesting situations we confront in international relations are best described in terms of singular causation. The second is to develop inefficient causation to structure causal narratives about international relations.

Singular causation comprises a large category of events that are causal but non-repetitive. Events of this kind cannot be explained by existing regularities, and they do not support new ones that will allow prediction. For singularity theorists, causation in such situations is intrinsic and a function not only of background conditions but the sequence of events. The phenomenon of singular causation poses a serious challenge to existing theories that insist on explaining an event by describing it as an instance of an event type and analyzing it in terms of general understandings of that event type.

[12] Patomäki, *After International Relations*; Kurki, *Causation in International Relations*; Joseph and Wight, *Scientific Realism and International Relations*.

In Chapter 2, I argue that many, if not most, events of interest to international relations theorists should be regarded as singular in causation because of the determining roles of context, agents, sequence, or confluence. I base this claim on numerous case studies. I have contributed to this literature by exploring the role of confluence in the origins of World War I and the end of the Cold War. In both instances, multiple streams of independent causes come together to produce an event that might not otherwise have occurred, or occurred at a time and manner in which its consequences could have been quite different.[13] I contend that singular causation is particularly relevant to the origins of war and peace, the growth and decline of rivalries and conflicts between individual states, the emergence and consolidation of interstate cooperation and any kind of transformation of regional or international systems. These are all central problems for international relations and its theories.

I developed inefficient causation as an elaboration of singular causation. It is a vehicle for combining general understandings with idiosyncratic but often determining features of context. It starts from the premise that so-called regularities are merely the tips of causal icebergs. In every case where an "X" shows some degree of association with a "Y," that "X" must be reframed as a new "Y" and explanations sought for it at progressively deeper levels of analysis. Such relationships are better discovered through process tracing than statistical association. This procedure can be followed for any hypothesized cause; it need not be a regularity. The goal is to establish a trail of possible causal connections that lead back to frames of reference that operate at the deepest level of what we call causation and then forward from them to outcomes of interest. Such frames have no ontological priority because they are themselves the product of other developments, most of them at more superficial levels.

This approach can also be described as "inefficient causation," as it looks for causes of causes, tracing back causal links as far as possible. It is not a search for Aristotle's prime mover, as we never expect to find a single, original cause. As we move away from one or more hypothesized efficient causes, we open up multiple causal chains that can take us back to multiple sets of underlying causes. There is never a first cause because these causes in turn are always the product of earlier

[13] Lebow, *Forbidden Fruit*, esp. chs. 2 and 3.

developments. Inefficient causation also differs from Aristotelian causation in a more fundamental way: as we progress to deeper levels of causation, we encounter different kinds of causes. We start with what might qualify as an efficient cause in Aristotelian terms, and move back through the efficient causes of this cause and their efficient causes to constitutive ones. At every step of the way we must consider the enabling conditions of these hypothesized causes.

I say "hypothesized" because there is no way of effectively establishing causation – more about this problem in due course. As a general rule, it becomes more difficult to make the case for causation, the deeper the analytical level or the further back in the past we look. This is one reason why Hume insisted that causes should be temporally close to the events they purported to explain.[14] In part, this is attributable to the multiple causal chains we identify and explore. We cannot trace them all, but must make defensible and transparent choices about those we want to pursue. Nor can we make controlled comparisons to evaluate the numerous factors in play.

How does inefficient causation work in practice? Chapter 4 attempted to demonstrate its efficacy with regard to the rise of the territorial state. I showed how the emergence of new visual frames of reference made it possible, even necessary, to imagine the territorial state. These frames of reference reshaped the approach to maps by cartographers. So did the process of rethinking the nature of the earth and its relationship to humankind. Maps became a more geographically accurate depiction of territories and their relative location. Such maps were a stimulus to efforts to bring such political units into being. Maps were not designed to make possible the territorial state; this was an unintended effect.

Visual frames and maps were also the outcome of several related processes. Chief among these was the autonomy of the individual. It was a process in the double sense of taking place over a long period of time and for the most part not the design of human actors. At a certain point, philosophers and writers developed an autonomy discourse, which accelerated change and made autonomy something of a project. When this happened, those supportive of autonomy looked for mechanisms (e.g., legislation, theater, school curricula) that might be mobilized in its support.

[14] Hume, *Treatise on Human Nature*, Part III, section 2.

Processes and mechanisms interact, often in complex and unpredictable ways. At the outset, the process of autonomy was the product of numerous uncoordinated human actions and not even recognized as underway. Early markers, which date back to the late Middle Ages, include a growing interest in privacy and greater differentiation of characters in literature. In early modern Europe, diverse actors attempted to shape – or suppress – individual autonomy through means as diverse as philosophical discourses and physical and other constraints. Later, education served these several ends. A conscious mechanism, it was used by churches and secular authorities to encourage or discourage free thinking and self-definition.

The interaction of processes and mechanisms reveals the difficulty of finding simple causal pathways to outcomes of interest. Major developments of all kinds are usually the product of multiple pathways and interactions, and possibly confluences among them. Such complexity allows us to set up the analytical problem in many different ways, and to work forward from the onset of some mechanism or process to discover some of their outcomes, or backwards from an outcome of interest to us to uncover some of processes and mechanisms responsible for it.

We can also start our inquiry with frames of reference and try to connect them to concepts and behavior. Either way, inefficient causation starts from the premise that conceptual and visual frames of reference determine how actors understand themselves and make sense of other actors and the social world. It directs our attention in the first instance to these frames, but in full recognition that they are mediated through processes, mechanisms, and actors. Inefficient causation seeks to develop layered accounts of human behavior in lieu of law-like statements. It rejects the latter, not only because of the philosophical and methodological problems associated with them, but in recognition that outcomes – and their meanings – are context dependent.

Inefficient causation puts equal emphasis on the frames of reference that people use to order the world, create a hierarchy of values, and identify problems and responses appropriate to them. Frames of reference are arrayed along a continuum. At the deepest level of causation, we find frames responsible for the concepts we use to make sense of the world. These include visual frames of reference, for, as Kant observed, our conceptions of space provide "regulative ideals" that we use to

generate concepts.[15] Such frames of reference establish categories of things and actions, and are prior to analytical and normative concepts. They make some of these concepts very likely and others all but inconceivable. In the middle of the continuum are frames that are constitutive and regulative. The former constitute actors, and the latter shape their behavior by stipulating what is permissible and legitimate and what is not. At the low end of the continuum are frames that are not as deeply entrenched and are more limited in their behavioral implications. They often begin life as conscious inventions, used by actors to sell or justify certain behaviors.

Deep frames of reference are the most important and also the most difficult to document. To the extent they are taken for granted, they are neither theorized nor debated. They accordingly leave fewer overt traces, making it necessary to devise clever strategies to detect their consequences, if not their existence. As we move from deep frameworks to social processes and interactions, a wide range of mechanisms are more applicable and visible. At each step of the way, from frames of reference through social processes and interactions to behavioral outcomes, we need to specify appropriate processes and mechanisms connecting these causes and search for evidence that makes these claims plausible.

Inefficient causation heightens our sensitivity to causal chains and provides an analytical framework for studying them. It also draws our attention to the possibility of causation across levels and social domains. This search for causes of causes is intended to lead us back, step by step, to medium and possibly deep frames of reference. It has the potential to lead us forward again in an ever-widening, more comprehensive search for patterns and outcomes associated with these frames. Our causal maps will never be complete, but this is not necessary to develop a reasonable understanding of the context that enables outcomes of interest. The more causal pathways converge and become reinforcing, the more important they are likely to be. Conversely, the more these pathways diverge and lead to an increasingly diverse suite of underlying causes, the more contingent or overdetermined the developments in question are likely to be. Counterfactual thought experiments are a useful tool in constructing such maps.

[15] Kant, *On the Form and Principles of the Sensible and Intelligent Worlds*, §4, 2:293 and §76, 5:404.

Cause and social science

In Chapter 1 I organize my discussion of different approaches to causation around three fundamental questions: what is a cause, is it a feature of nature or an invention of the human mind, and what formulations of it are appropriate to international relations? Patrick Jackson uses the term "wager" to describe the beliefs researchers have about the utility of different ontological and epistemological assumptions.[16] Inefficient causation makes a series of wagers that are best described in terms of its responses to these three questions.

What is cause? Inefficient causation rejects thin Humean accounts on logical and empirical grounds. It insists on thicker understandings that require researchers to identify processes and mechanisms that might be responsible for the outcomes they seek to explain. It also divides the causal problem into two parts: behavior and its consequences. Mechanisms and processes are critical to both and are highly context dependent in their operation. Most importantly, inefficient causation denies that it is possible to derive or develop warrants for truth claims. I follow Wittgenstein in recognizing that belief trumps epistemology. It determines how we think knowledge is acquired and thus what we think is knowledge.[17]

Inefficient causation attempts to provide a thick account of cause. Because mechanisms and processes operate in context, we must know more about that context. Our inquiry should be shaped by two concerns. The first might be characterized as the search for enabling conditions: features of context that must be present for a mechanism or process to function in a particular way. In the case of war, many underlying causes have been identified. But they only result in war in special conditions. We cannot take these conditions or the catalysts for war for granted, as they are sometimes quite independent from what we consider the underlying causes.[18] The second feature of context involves the recognition that multiple mechanisms are often responsible for outcomes, as they are in confluences. So we must be attentive to multiple chains of causation and their mechanisms and processes and their enabling conditions.

[16] Jackson, *Conduct of Inquiry in International Relations*, pp. 32–5.
[17] Wittgenstein, *On Certainty*.
[18] See Lebow, *Forbidden Fruit*, ch. 9, for the contingency of enabling causes.

This is not the end of the trail. We must pay equal attention to the constitutive part of the term. Constitution determines who is recognized as an actor and how they are expected to relate to other actors. It is the primary source of identities and values, which are principal determinants of human behavior. In *A Cultural Theory of International Relations*, I show how different identities coalesce around different emphases on honor and wealth. They generate different logics of cooperation, conflict, and risk taking, different kinds of hierarchy and appeal to different principles of justice, all of which have important implications for foreign policy.[19] I nevertheless believe that constructivists have unreasonably limited their focus to identities and their consequences. There are other frames of reference that are neither identities nor reducible to them. Some of these frames – I offer examples in Chapter 2 – are more superficial and only have consequences to the degree that religious, political, or commercial entrepreneurs convince people that they help to instantiate or sustain their identities. Others, like the visual frames I examine, exist at a deeper level and provide a framework supportive of particular kinds of identities.

Is cause a feature of the world? Realists (in philosophy) treat cause as something natural. Most realists nevertheless acknowledge that the concepts we employ to capture cause are subjective. They deny that they are arbitrary on the grounds that trial and error can lead to better, and hence, more objective, characterizations of the world. Reflexivists maintain that cause is an invention that we impose on the world. Many agree with Hume in considering it one of many cognitive devices we use to make sense of the world.

Inefficient causation is in the reflexivist tradition. It considers cause to be artifice, but useful for scientific and everyday purposes. Evidence for the artificial nature of cause is provided by science and philosophy. Cause is not universally applicable across the sciences. In some branches of physics, and much of biology, scientists develop understandings that are non-causal or only loosely causal. They recognize the difficulties, if not impossibility, of imposing causal accounts on the phenomena they study. For their part, philosophers have been unable to devise any logically complete and empirically encompassing formulation of cause. If, as Kant believed, the human mind was constructed – "hardwired" in today's terminology – to reflect the structure of the

[19] Lebow, *Cultural Theory of International Relations*.

world, we would certainly have found a concept of cause that mapped well onto at least the physical world. Not only have we failed in this task, but the multiple formulations of cause we have devised provide no more than partial insights into that world. We must be careful not to confuse our obvious deep-seated desire to explain the world with the ability to do so.

Reflexivists commonly distinguish the social from the physical world. I find that many key cleavages cut across this distinction. Scientists and social scientists alike dispute the extent to which cause is a helpful concept in their research domains. Those who use the concept adopt diverse framings. Most of these go beyond association in an attempt to provide explanations for outcomes. They understand that such accounts are more satisfying if more difficult to establish. As we have seen, the historical sciences are something of a bridge between the physical and social sciences as they study phenomena that are heavily dependent on initial conditions and look more to natural experiments than to laboratory ones for comparisons. They are also better at explanation than prediction because of the open-ended, non-linear nature of their subject domains. What determines outcomes cannot be captured by theories alone. Michael Scriven has famously made this argument in the case of evolutionary biology, where he distinguishes explanation from prediction.[20]

Once we acknowledge cause as artifice, a number of corollaries follow. First and foremost, is the recognition that the concept of cause hardly ever maps neatly onto the world. Any formulation will be incomplete and limited in scope. A combination of formulations will provide wider coverage but at the cost of introducing different, and to some degree irreconcilable, conceptions of cause. There will be outcomes in the physical and social worlds that cannot be accounted for causally. This is because of the subjective nature of our concepts, including those of cause. As artifice, cause cannot be anchored in anything real. This problem is most evident in the social world where there are no natural kinds. However, it is also apparent in the sciences. In biology, where a stronger case might be made for natural kinds, biologists have devised many schemes for classifying life-forms. These typologies are human creations and inevitably, some forms of life must

[20] Scriven, "Logic of Criteria"; Suganami, *Causes of Wars*, pp. 125–6.

be left outside of these typologies or shoehorned into categories where they do not fully belong. The very concept of species is artifice and runs into similar problems for this reason.

If diverse conceptions of cause are defensible, even necessary, then we must be prepared to accept diverse causal accounts of the same outcomes. With regard to the territorial state, I contrast the explanations offered by Herz, North and Thomas, Tilly, Spruyt, Ruggie, and Nexon. They invoke different causal mechanisms, as do I.[21] There is much to be gained from drawing on elements of at least some of these explanations into a richer and fuller account. This is justified if – as I believe – that developments like the territorial state, the industrial revolution, the rise of democracy, World War I, the end of the Cold War, the rise of religious fundamentalism, have complex origins that cannot effectively be explained by any single narrative. Positivists may condemn this approach as irresponsible pluralism. However, there is good precedent in modern physics, where Murray Gell-Man and James Hartle, among others, argue for multiple, equally valid stories about the physical world.[22] Instead of searching for a single truth, inefficient causation starts from the assumption that there is no single truth or single perspective on events. Truth – to the extent there is such a thing – is most closely approached through a composite of multiple, distinct, even conflicting views.

Realists contend that the subjective nature of concepts does not make them arbitrary if research helps us refine them to provide a better fit with the world. Research into the rise of the territorial state is one of many developments that indicate how unlikely this is to happen. More research encourages more diverse accounts and the turn to different causes and mechanisms. For the fall of the Roman Empire, the French Revolution, and World War I, causal accounts number in the dozens. How do we discriminate among them? It is difficult to do so on causal grounds, as different formulations of even the same causal approach are often incommensurate. Of necessity, we must fall back on the logical structure of the argument and its seeming power and fit with

[21] Herz, "Rise and Demise of the Territorial State"; Tilly, *Formation of National States in Western Europe*; North and Thomas, *Rise of the Western World*; Ruggie, "Territoriality and Beyond"; Spruyt, *Sovereign State and Its Competitors*; Nexon, *Struggle for Power in Early Modern Europe*.

[22] Smolin, *Life of the Cosmos*, p. 266.

evidence. I elaborate a set of criteria, most of which apply to so-called "factual" as well as counterfactual arguments.[23]

Positivists speak of trade-offs between rigor and completeness. They portray nomological approaches as emphasizing parsimony and idiographic accounts as more interested in completeness. Parsimony, in turn, is commonly defined as the minimum number of variables necessary to account for a significant percentage of the variance. The rule of thumb is to stop adding additional variables at the "knee" of the curve. Inefficient causation offers a different take. It does not value parsimony for its own sake, because it is not a regularity theory and does not seek to make predictions. Rather, it aims to create complex causal maps that offer rich, redundant, accounts of outcomes. It does so by attempting to identify immediate, mid-level, and underlying causes and their respective mechanisms and enabling conditions. What positivists regard as overkill, inefficient causation considers of enormous analytical value. The more elaborate our causal picture, the better able we are to determine what any outcome shares with others. Comparisons of this kind serve two functions. They help to identify possible causes of outcomes, and provide the basis for forecasting, a subject I address below.

Singular cause: The need for comparison brings us to the third key cleavage among philosophers of science. Singular cause comprises the category of events that are causal but non-repetitive. Causation here is intrinsic and a function of specific conditions and sequences of events. I contend that many of the most important developments in international relations are best characterized under the rubric of singular causation. There are two supporting reasons for this claim. The first is that many important outcomes or features of international relations are "one-offs," like the rise of the territorial state, the European project, or globalization. Alternatively, they are representatives of event types that have very small N's. Even these latter events – systemic wars for example – have many idiosyncratic features, making comparisons unwarranted unless the researcher can convincingly demonstrate that key features of context are similar across "cases." Even when conditions of independence and comparability can be met – which is rarely the case – reflexivity enters the picture, depriving cases

[23] Lebow, *Forbidden Fruit*, ch. 2.

of their independence. Leaders are aware of prior outcomes and adjust their expectations accordingly.

Inefficient causation requires us to look not only for commonalities between or among the events we select for comparison but also for critical differences. By doing so, we gain initial points of entry into a new situation and the background knowledge to construct multiple causal chains. Comparison of causal chains helps us determine what is similar and unique about any event. Too firm a commitment to parsimony is a barrier to meaningful comparative analysis.

In some branches of science there is no logical difference between explanation and prediction. When there are constant conjunctions, or systems that consistently tend toward equilibrium, explanation and prediction can be treated as equivalent. In international relations, where there are neither constant conjunctions nor systems that tend toward equilibrium, explanation and prediction must be distinguished analytically and empirically. Explanation is the more realistic of the two goals, but is still a daunting task. In Chapter 2, I characterize inefficient causation as a set of procedures to "probe" causation. Establishing cause is never possible. The best we can do is to identify one or more causal chains that connect hypothesized causes to outcomes by specifying relevant mechanisms or processes and their effects. As cause is not a feature of the world, we have no acceptable formulation of it, and probably could not meet its conditions if we did. Assertions of cause are always rhetorical. We use the language of "science" to convince other investigators that our claims are reasonable, even persuasive. Success hinges on our ability to meet a set of conditions I lay out in Chapter 2 that have to do with the internal logic and completeness of our argument and its consistency with available evidence. Even when convincing, such claims by no means preclude other causal narratives.

Prediction – except of the most banal kind – is generally impossible in international relations.[24] Forecasting is a more feasible goal, and inefficient causation is designed to provide the basis for such scenarios. It does so by developing a sufficiently comprehensive understanding of events to make it possible to make intelligent comparisons between

[24] For a defense of prediction, see Ray and Russett, "Future as Arbiter of Theoretical Controversies"; Bueno de Mesquita, *Predicting Politics*; Chernoff, *Power of International Theory*.

a contemporary situation and past ones that appear similar and may suggest relevant lessons. It alerts us to what may be relevant causal mechanisms and processes and the contexts in which they function. Inefficient causation accordingly combats the tendency of policymakers, and people more generally, to learn misleading lessons from the past because they usually base them on superficial comparisons.[25] Inefficient causation encourages us to make more meaningful comparisons by identifying salient causal features of comparative outcomes and the mechanisms and processes associated with them. By making us aware of variation in outcomes due to differences of context, inefficient causation alerts us to the possibility, perhaps the likelihood, that any scenario we construct will be confounded by events. It suggests alternative story lines that we should think more about if evidence accumulates that our forecasts are unlikely to materialize.

Scenarios are not predictions; they do not assign probabilities to outcomes. Rather, they start from the assumption that the future is unpredictable and go on to construct multiple narratives of how the future *might* unfold. Good scenarios distinguish what we believe is relatively certain from what we think uncertain or unlikely. The most important "certainties" are common to all scenarios that address the same problem or trend, while the most important perceived uncertainties differentiate one scenario from another.

Scenarios make contingent claims rather than point predictions. They reinsert a sensible notion of contingency into theoretical arguments that would otherwise tend toward determinism. Scholars in international relations tend to privilege arguments that reach back into the past and parse out one or two causal variables or mechanisms that are posited to be responsible for past and future outcomes. Our field also favors variables that are structural or otherwise parametric, downplaying the roles of agency, confluence, and accident. Forward reasoning undercuts structural determinism by raising the possibility and plausibility of multiple futures.

Scenarios are impressionistic pictures that build on different combinations of causal accounts that may also take on different values in different scenarios. The foundations of scenarios are provisional assumptions and any causal chains our theories generate. These become the subject of revision and updating more than testing. A set of scenarios

[25] Jervis, *Perception and Misperception in International Politics*, pp. 227–39.

often contains competing, or at least contrasting, assumptions. It is less important where we start, than how often we update and revise, and consider beforehand the kind of developments that would increase or decrease our confidence in any scenario.

What is knowledge?

At the outset of this book, I observe that social science has traditionally defined knowledge as knowledge of cause. In practice, this bedrock assumption rarely guides mainstream social science research. In international relations, as elsewhere, neopositivists – especially those committed to quantitative research – are more interested in association than cause. So too are experimentalists. These researchers could defend their interest in cause with reference to Humean causation or some other regularity theory, but more often they characterize association – as King, Keohane, and Verba do – as a first essential step in the search for cause.[26] Curiously, these researchers hardly ever progress beyond this stage. Case study researchers, many of them antagonistic to positivism, are an important exception. They search for causes, and use process tracing toward this end.[27]

Formal modelers have little use for associations and largely finesse the question of cause. Most turn to mechanisms, notably strategic choice, to explain outcomes. Simulation makes even less use of cause for the phenomena it attempts to generate or explain. Adam Smith coined his "invisible hand" and Hegel the "cunning of reason" to account for beneficial system-level outcomes that are the result, but not the intention, of self-interested behavior by individual agents.[28] Following the pioneering work of Friedrich Hayek, emergent properties has become an increasingly important field in economics and political science.[29] Reductionist strategy attempts to explain a phenomenon in terms of a particular unit. Emergence seeks explanations

[26] King, Keohane, and Verba, *Designing Social Inquiry*, pp. 7–8.
[27] George and Bennett, *Case Studies and Theory Development in the Social Sciences*.
[28] Smith, *Wealth of Nations*, IV.2.4 and 9; Hegel, *Philosophy of History*, II.(2).§37.
[29] Bremer, *Simulated Worlds*; Cusack and Stoll, *Exploring Realpolitik*; Axelrod, *Evolution of Cooperation*; Cederman, *Emergent Actors in World Politics*; Epstein and Axtell, *Growing Artificial Societies*; Jervis, *System Effects*.

in the interplay of component elements. By placing nitrogen and glycerin together, explosion results. Water is not caused by hydrogen or oxygen, but by their interaction. Life itself is best conceived as an emergent property.[30]

In sharp contrast to much research in the social sciences that stays within the same level of analysis, emergent properties is interested in connections across them. Outcomes at the system level are the result of the ways in which the consequences of behavior are mediated by rules at the system level. These rules can remain unknown, making it difficult to compare systems in the absence of numerous iterations of interactions based on real or simulated data. But even when discovered, they do not represent cause as that term is generally understood.

Simulation and the assumptions on which it rests have emerged as an alternative model of science. For most of the twentieth century, good theories were considered to be those that used linear equations to describe the evolution of continuous quantities. Information technology has enabled a discrete on–off approach to phenomena that are rule governed. We search for simple rules – algorithmic systems – when endlessly repeated, generate complex, system-level patterns. Beginning in biology, this approach spread to physics and then to the social sciences. It offers explanations of a non-causal kind.

Some contend that constructivists should eschew the pursuit of cause. Alexander Wendt insists that constitution and cause live in parallel but separate universes.[31] Committed constructivists – among them, Nick Onuf, Fritz Kratochwil, John Ruggie, Cecelia Lynch, and Audie Klotz – maintain that constitution has important causal consequences. Inefficient causation is squarely in this latter tradition. I believe that the growing case study literature that documents the causal implications of identities demonstrates the wisdom of these bets.

Just how essential is cause to understanding political behavior? Different research traditions have rarely taken stands on this question but they have made moves that implicitly embrace, reject, or finesse the importance of cause. As its name indicates, inefficient causation assumes that cause is an important but by no means exclusive route to knowledge. Constitution is co-constitutive of any deep understanding of cause. Perhaps more importantly, it provides the framework in

[30] Anderson, "More is Different."
[31] Wendt, "On Constitution and Causation in International Relations."

which social behavior becomes meaningful and enables us to search for causes.

A more satisfying answer about the importance of cause requires a sharper understanding of what we mean by the term. The discussion of physics and philosophy in Chapter 1 indicates that this condition is never likely to be met. For Humean and other regularity theories, cause is nothing more than tight association. For DN models and Kantians, it is law-like explanation. For process models, it is mechanisms and their enabling conditions. For critical realism it is the combination of causal properties, mechanisms and their enabling conditions. Inefficient causation requires efficient causes, mechanisms, enabling conditions, and cognitive frames of reference. As this cursory review indicates, there is no definition of cause independent of the procedures designed to establish it, and this entails some circularity. In the absence of an independent or consensual understanding of cause, it is difficult, if not impossible, to assess its role and centrality in generating political knowledge. This problem is aggravated by the empirical difficulty of actually establishing cause by any of the methods we have examined.

Ancient Greeks described four kinds of knowledge: *technē*, *phronesis*, *epistēmē*, and *sophia*. *Technē* was equated with practical knowledge of the kind that allows people to fashion things or grow crops, win athletic competitions, and reach concrete goals. Plato's Socrates applied *technē* more broadly to the social realm. He maintains that dialectic – in contrast to sophistic rhetoric – is the true art of politics because it facilitates meaningful discourse.[32] In his search for knowledge, Socrates professed to be greatly impressed by the genius of craftsmen (*technikos*). Some of them nevertheless presumed to know everything, or thought themselves capable of judging everything on the basis of their specialized knowledge.[33] Modern social science aspires to produce knowledge in the form of *epistēmē*. As understood by Aristotle, *epistēmē* consists of propositions and theories that facilitate explanation and prediction.[34]

Many social scientists mistakenly consider *epistēmē* the highest form of knowledge. This is a variant of the error of Plato's ancient craftsmen who equated their limited form of knowledge with wisdom (*sophia*). For the Greek poets, Thucydides and Plato, *sophia* describes an

[32] Plato, *Gorgias* and *Republic*, 509d, 531d–534c.
[33] Plato, *Apology*, 22c–d. [34] Aristotle, *Nicomachean Ethics*, 114b3–7.

understanding of life that goes beyond any form of discrete knowledge to grasp our relationship to one another and the world. Plato defines *sophia* in a manner surprisingly applicable to international relations. It is knowledge, possessed by the rulers of his Republic "that takes counsel about the city as a whole as to how it would best order its relations to itself and to other cities."[35] Such knowledge is difficult to come by, for as Aristotle points out, the more comprehensive and universal something is, the harder it is to know because the further away it is from our senses.

I am inclined to agree with Hans Morgenthau that politics is at least as much an art as it is a science, in which case the relevant category of knowledge is *phrōnesis*. Aristotle defines *phrōnesis* as practical reason or prudence and describes it as arising from reflection about the consequences of our behavior and that of others.[36] It is a form of general knowledge, but always concerned with particulars. It can help us make happier lives for ourselves by leading us to more appropriate goals and means to achieve them. Inefficient causation is not a source of *phrōnesis*, and makes no embracing claims about being a source of knowledge. However, there is reason to believe that it might prove more useful than *epistēmē* to policymakers both as a source of policy guidance and as a means of critically examining their goals and means. In contrast to *epistēmē*, inefficient causation has direct and beneficial normative implications even if it has no normative agenda.

My emphasis on *phrōnesis* is rooted in modern as well as ancient philosophy. For the Greeks, and for the Medieval Scholastics, knowledge of context and its particulars was superficial. It was considered accidental and ephemeral. The goal of the intellect was to discover timeless, universal truths. Renaissance and early modern philosophers rejected only part of the Aristotelian worldview. They localized causation by removing original, material, and final causes, but retained his and the ancient belief in universal, transcendent truths to be discovered through the application of reason. Hume and modern social science are just as committed in the search for universals, rationality, and general transcendent truths.

The truly radical Renaissance thinker, and the first to break with this tradition, was Machiavelli. He rejects the common understanding of

[35] Plato, *Republic*, 428c12–d13, also 429a1–3.
[36] Aristotle, *Nicomachean Ethics*, 1139a29–1141b20.

morality as timeless and universal, and describes it, as everything else in the world, as transient and unconnected to anything more enduring.[37] Inefficient causation builds on this Machiavellian insight and can claim to be more modern than its positivist counterpart. It rejects the existence of any timeless or universal truths about human beings and their societies, regarding their practices and values as local, conditional, and partially idiosyncratic.

Social knowledge, like morality, is culturally and temporally bound. Weber starts from this Machiavellian premise. He acknowledges the need to seek causal explanations but rejects the possibility of general laws as they would require investigators to transcend cultures and their own position within them. He invented his concept of ideal types as a response to this dilemma.[38] Inefficient causation is rooted in Weber's understanding of the social world and, I believe, elaborates a means of offering causal judgments that he would find attractive.

[37] Pocock, *Machiavellian Moment*, pp. 4 and 53.
[38] Weber, *Methodology of the Social Sciences* and "Science as a Vocation"; Strong, *Politics without Vision*, pp. 105–12.

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