8 Scientific Worldviews in World Politics
Rationalization and the Cosmological Inheritance of the Social Sciences

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In the Weberian tradition, worldviews "imply a coherent set of values" that provide "answers to the broader questions of meaning, purpose, suffering, and injustice."[1] Worldviews imbue the lives of their holders with "direction, organization, and unity."[2] Weber distinguishes worldviews from other collections of beliefs and values in two ways. First, analytically, the coherence and comprehensiveness of worldviews distinguish them from organizational cultures or ideologies. Second, worldviews are distinct from myths or cosmologies to the degree that they form a system of rationalized beliefs and claims. They contain explicit values that tend to produce regularized conduct.[3]

In this chapter, I differentiate worldviews from other collections of fundamental beliefs about the universe: cosmological ideas. I define cosmology as a configuration of ideas and practices that relate humans to the nature of the world and the universe. Cosmologies weave together a variety of fundamental claims about humanity and reality. In previous work, I have distinguished between five kinds of cosmological elements:[4]

ONTOLOGY: fundamental units of matter, the forces that govern them, and categories of representation.
EPISTEME: modes and procedures likely to produce reliable or true knowledge of the universe.
TEMPORALITY: the nature and direction of time.
COSMOGONY: the origins and history of the universe.
HUMAN DESTINY: the role or place of humanity in the cosmos.

[1] Kalberg 2012, 74. See Katzenstein, Chapter 1, this volume. [2] Kalberg 2012, 75.
[3] In the implicit Weberian theory of action, worldviews generate behaviors through their institutionalization in routines and organizations. It is worth noting that in this volume (Katzenstein, Chapter 1), worldviews and actions are at the very least in a recursive relationship in which they express repetitive habits and emotions, which in turn perform and reproduce those worldviews.
[4] Allan 2018, 11.

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On this conception, cosmologies are not fully coherent doctrines that all members of a social group internalize and understand.[5] Rather, we should imagine that cosmological elements circulate in and through texts, memories, rituals, institutional rules, organizational procedures, and so on. They are available as resources for the creation of more or less coherent cosmologies in particular contexts. However, there is little basis for assuming that all individuals within social groups share a single set of beliefs about the universe.

On my account, worldviews are local stabilizations of cosmological elements. They draw together fundamental ideas about the universe into a coherent package of values, identities, and beliefs. In order to frame certain values as meaningful and natural, worldviews depend on ontological presuppositions about what exists and epistemic notions of how we know which values are worth pursuing. A worldview cannot exist without cosmological elements. But again, not all actors have a worldview. To use the concept wisely, we have to theorize the conditions under which worldviews can be produced and stabilized by individuals.

In this chapter, I use this distinction between cosmological elements and worldviews to renarrate the story of rationalization. On Weber's account, rationalization processes make worldviews possible by creating abstract systems of beliefs that are instilled in individuals, orienting them to the fulfillment of universal values. At the same time, the rationalization embodied in scientific ideas threatens the cohesiveness of worldviews by accelerating disenchantment. This undermines our orientation to universal values and threatens to eliminate ethical constraints on action. Weber's great insight here is to historicize the elements of action. I contend he did not take this far enough and that we can benefit from a deeply empirical tracing of the grounds of action.

My argument is that the rationalization narrative is better understood as a more specific historical process: the rise and spread of cosmological ideas from the Western scientific tradition. Specifically, I trace the history of two cosmological elements: materialism and object-orientation. Taken together, these cosmological elements create a backdrop for action in which subjects are separate from a material world of objects. The process of folding materialism and object-orientation into political discourses did not disenchant worldviews, draining them of meaning or eliminating value-orientations. Rather, it formed the basis of new modernist values of rationality, control, and growth which serve as the basis of world

[5] On this, see Barth's (1987) study of ritual variation within cosmological traditions.

politics today. I suggest that worldviews centered on the values of "civilization" (in the colonial era) and "economic growth" (in the postwar era) rested on materialist presuppositions and object orientations.

With this history in hand we can better examine the scientific worldviews that appear in the social sciences today. My goal here is to show that the cosmological inheritance of the social sciences, materialism and object-orientation, must be examined. With Katzenstein and Kurki, I trace the desire to control the world back to scientific ideas, but I hope to add value by identifying some of the specific ideas involved.[6] I suggest that materialism and object-orientation make the social sciences susceptible to colonial modes of analysis. But, rather than reject social science, I defend a pluralist field and present the possibility of a re-enchanted social science that reflexively grounds itself and its worldviews in cosmological traditions.

8.1 Worldviews and Cosmologies in Process

Following Katzenstein, worldviews are local, temporary sets of connected beliefs that express a strong sense of how the world works.[7] On my conception, worldviews are local and temporary enactments. By temporary, I mean to highlight that the formation of a coherent, politically effective worldview is an achievement. Worldviews are the result of individuals expressing and refining collections of beliefs. Worldviews must be forged by weaving cosmological materials together with habits, emotions, values, and identities into relatively coherent frameworks. Their political effectiveness is always the result of sustained effort.

For this reason, worldviews are local. By local, I mean that worldviews are held, or enacted, by specific individuals, social classes, and professions. We should not ascribe them, as Weber seems to do, to entire societies or regions. On this view, worldviews are not likely to be deeply structural elements of the international.[8] But they are often necessary to explain the actions of particular individuals and groups.[9] For example, if we want to explain why Keynes acted the way that he did in the Bretton Woods negotiations, or why the neoconservatives in George W. Bush's administration sought war with Iraq, we need to understand the

[6] Katzenstein, Chapter 1; Kurki, Chapter 3, this volume. [7] Chapter 1.
[8] That said, I consider this to be an empirical question. In principle, someone could demonstrate the operation of a coherent set of values operating across states. But I think rigorous studies of the international distribution of ideas find more difference than similarity. See Hopf and Allan 2016.
[9] Haas and Nau, Chapter 2, this volume.

worldviews of these participants. But not everyone has a worldview, and not every important event in world politics is shaped by worldviews.

The backdrop here is a world of processes in which actors, organizations, rules, values, and cosmologies are in motion.[10] The values and principles underlying international order, for example, are not simply static lines of text written in charters and treaties. Those lines must be meaningful to a community of interpreters that consists of state officials, international organization bureaucrats, global civil society members, and epistemic communities. These actors carry and reproduce sets of beliefs and values. They creatively engage with them, pushing and pulling them to help solve problems. Thus, the ideas that underlie world politics are dynamically negotiated and in flux. Nonetheless, we cannot abandon the task of trying to specify the ideas that structure world politics. But to do so, we need to think about how ideas are stabilized in a processual world.

8.1.1 Modes of Stabilization

To explain stability in a world of process, we need to theorize the modes of stabilization that underwrite persistence and continuity. I want to highlight just a few modes of stabilization: social groups, anchoring practices, and what I call complementarities. First, stability can be underwritten by social groups that carry and reproduce relatively stable ideas. Consider the role of scientists, experts, and professionals. These groups carry and reproduce professional values, scientific models, and epistemic tools. Powerful processes of technical and professional socialization can impart similar representations, beliefs, values, ethoses, and desires. But even individuals shaped by coherent groups may drift apart unless their socialization is reinforced by anchoring practices. Anchoring practices are "repeated interactional patterns" that pull individuals to deploy the same actions and meanings.[11] In professions and expert groups, anchoring practices are usually premised upon an epistemic tool, such as clinical diagnostics for medical professionals or cost–benefit analyses for management consultants. These practices draw actors into similar contexts where they reproduce similar values, models, and desires over time.

Reaching for a general mechanism here, we might say that stability can be achieved by forging complementarities between ideas and practical, social, institutional, and political contexts.[12] Complementarities are alignments between ideas and contexts, such that the elements reinforce

[10] Whitehead 1978; Abbott 2016. [11] Swidler 2001: 85. [12] Allan 2019: 189.

one another. Complementarities are forged by creative actors around the key purposes or anchoring practices of groups and organizations. They operate when ideas and practices lead actors to move back and forth within a set of categories, actions, and values.

For example, officials in the World Bank have disbursed loans on the basis of financing gap models.[13] These models serve as an anchoring practice to help staff solve the epistemic and political problems that arise in their work. But those models also have to be aligned with the social norms and institutional rules that help officials execute their tasks in a complex organization. Beyond the Bank, financing gap models were legitimated and reinforced by academic growth theory. Growth theory was complementary to financing gap models, desired increases in national income, and institutional rules that promoted large loans. The complementarities across these elements helped stabilize each element. Nonetheless, the drawing together of disparate elements always forms a dynamic nexus that is shifting and evolving, even if it exhibits continuities.

Complementarities are not preexisting or functional entities. They are forged by creative actors that seek to align ideas and contexts. Creative actors must yoke together practices, rules, and beliefs, forging the connections that underwrite stability. There is play and contingency in the process of alignment. The form and content of social life emerges from the coming together of elements that each have their own contingent history.

The forging of complementarities is essential to the challenges of political mobilization. In a processual perspective, politics is about moving people.[14] Moving people requires ideas, but also opportunity, resources, and organization. It requires creative work to align ideas with the necessary contextual factors. Constructing a stable, politically potent worldview is precisely this kind of creative act. But this local creativity is always suffused by multiple and intersecting structural processes that operate in similar – which is not to say the *same* – ways across space and time. Agency is always possible but never omnipotent. Creative agents must work with and against the cosmological and institutional resources at hand.

8.1.2 Worldviews in World Politics

In order to see how powerful worldviews are forged in world politics, consider the emergence of economic worldviews in the twentieth century.

[13] Allan 2019: 192–93. [14] Tilly 2001; Tilly 2003.

Recall that worldviews draw on cosmological elements such as ontological categories and epistemic claims about good knowledge. Since the late nineteenth century, the ontological categories of Western politics have been dominated by representations of epistemic objects like society, public health, labor, the economy, human rights, and the climate. These objects were constituted as distinct entities by scientists, experts, and professionals who defined, measured, and codified them. But they were not merely "constructions": they reflected, and constituted, changes in practice.[15] New practices, transactions, and flows brought together individuals into fields of action that could be demarcated from others.[16] Thinkers and practitioners forged complementarities between the philosophical distinction between subjects and objects and a new set of epistemic tools for representing and intervening in objects.

Objects depend on both the modes of stabilization introduced earlier. Objects are stabilized by social groups of experts and professionals. Economists, for example, help produce and naturalize the economy. Objects are stable to the extent that they are embedded in practical, social, institutional, and political contexts. As Daston puts it, "scientific objects ... grow more richly real as they become entangled in webs of cultural significance, material practices, and theoretical derivations."[17] In the terms of this volume, embedding economic objects in worldviews gives them a place in the political projects of actors. From there, elements of worldviews are institutionalized in policy statements, organizational procedures, rules governing exchange, capital investments of firms, and so on. The economy is made rather than imagined.

In the twentieth century, a number of important groups in the United States and the Soviet Union developed economic worldviews. In the United States, for example, the economy was the basis for Rostow's worldview, in which American liberalism would establish a world order wherein all societies would modernize into liberal democracies.[18] In the Soviet Union, the Communist Party articulated a worldview in which "The New Soviet Man" would embody the modernity of an economic order led by the revolutionary class.[19] The expansion of production through economic planning in the Soviet Union would usher in a new communist world modernity.[20] Thus, the postwar international economic order came to be structured by two competing superpowers, both of which enacted economic worldviews.

These worldviews were premised on cosmological elements. First, they relied on an ontology in which "the economy" is designated as an isolated

[15] Mitchell 2002. [16] Daston 2000. [17] Daston 2000: 13. [18] Gilman 2003.
[19] Hopf 2002. [20] Rindzevičiūtė 2019.

social object in a field of social objects (alongside politics, society, public health, households, etc.). These worldviews were simply not possible before the 1950s and the 1960s because there was no concept of "the economy" before the 1930s. According to Mitchell, prior to the 1930s, references to "economy" denote the old, eighteenth-century principle of prudent management or frugality.[21] It is only with the advent of a new epistemic tool, national accounting statistics, that the economy became a delimited object. A new concept and a new tool could then be aligned with diverse developments, such as the increase in financial flows, to create a genuinely new social sphere. That is to say, the economy is not merely a social construct, but is the product of the rearrangement of the world. As such, it provides a stable basis for the construction of new values and state practices of intervention.

Second, as Scott argues, both Cold War worldviews were premised on an epistemic basis he calls "high-modernism": "self-confidence about scientific and technical progress, the expansion of production, the growing satisfaction of human needs, the mastery of nature (including human nature), and, above all, the rational design of social order commensurate with the scientific understanding of natural laws."[22] High-modernism is epistemic in the sense that it relies on assumptions about how knowledge can be used. It rests on an ontological depiction of the universe as a law-governed order. And it has a clear relation to values including the desirability of rationality and the imperative to dominate nature. In this way, high-modernism merges cosmological elements and the kinds of specific values that structure worldviews.

So, the contending worldviews of the Cold War were in part built upon a set of common cosmological elements which were creatively combined into different worldviews. What I want to suggest in the next section is that none of this was natural. It did not emerge from a universal process of development, modernization, or rationalization. Instead, it was the product of a more uncertain channeling of cosmological elements from the natural and social sciences into political discourses. Thus, the worldviews that circulate in world politics and social science are products of a particular history of cosmological change.

8.2 Rationalization: The History of Scientific Worldviews

Weber's theory of rationalization offers an entry point to consider the history of worldviews in the West. Although Weber does not distinguish between worldviews and cosmological ideas, drawing the distinction

[21] Mitchell 2005. [22] Scott 1998: 4.

helps reframe Weber's theory of rationalization. Taken together, *The Protestant Work Ethic* and *The Sociology of Religion* argue that worldviews are a product of the rationalization of myths and religions.[23] Rationalization creates a world of external values that can structure subjectivity and motivate individuals.

By pushing the historical thrust of Weber's argument further, we arrive at a conception of the self as constituted by cosmological elements.[24] This conception of a self that is relationally constituted by cosmological ideas helps us to unbundle the concept of rationalization and its supposed product, Western modernity, into more historically specific processes. My argument is that we can better understand the history of Western worldviews by tracing two cosmological developments: the emergence of materialism and the production of a world of objects. As we shall see, these developments provide resources for the construction of worldviews in world politics. Moreover, these ideational configurations were stabilized through their relations to one another (complementarity) and the economic and colonial contexts in which they were developed (anchoring). Finally, we shall see that they comprise part of what I call the cosmological inheritance of the social sciences. This inheritance orients us to control and makes it easy to slide into colonial modes of analysis.

8.2.1 Rationalization in Weber

Weber's theory of rationalization is a key part of his overall theory of modernity, which aimed to explain the distinctiveness of the West. Weber placed so much importance on rationalization because he felt it was necessary to account for the emergence of capitalist development in the West.[25] This, in part, serves as a legitimation of the superiority of the German nation and Protestant value-orientations.[26] There are now a number of literatures that call into question the distinctiveness of the West and the need for a theory of Western exceptionalism.[27]

[23] My exegetical focus here is on the latter text, which represents Weber's later views on the matter.

[24] This can be read as a complement to Grove's relational reading of Weber in this volume (Chapter 4).

[25] Schluchter 1985: 9–12.

[26] Boatça 2013; Shilliam 2008; Zimmerman 2006. I am grateful to Robbie Shilliam for conversations on this point.

[27] On the importance of the East in the development of the West, see Abu-Lughod 1991; Hobson 2004. On the importance of colonialism see, Pomeranz 2000; Findlay and O'Rourke 2007. On the importance of the salutary European climate offered by the Medieval Warming Period, see Fagan 2008.

Nonetheless, working through Weberian rationalization can help us reconsider the role of scientific ideas in Western worldviews.

Weber uses the term "rationalization" to apply to wide variety of processes: the systematization of religious belief, the increasing precision of military procedures, the legalization of political life, and so on. It refers broadly to the standardization, abstraction, and quantification of behavior in any social sphere. I want to focus on two effects of rationalization processes.[28] First, substantive rationalization produces *value-oriented* individuals and systems of ethics. Second, practical and formal rationalization increases instrumental rationality and pure means–ends action. For Weber, the rise of science intensifies the disintegration of ultimate values and the domination of formal means–ends rationality.

In *The Sociology of Religion* all the major world religions undergo substantive rationalization. Weber argues that the rationalization of religions results in prophets making increased ethical demands upon the gods. Over time, prophets tended to produce more complex and systematic theoretical accounts of the universe that depicted it as a "harmonious and rational order."[29] These demands rested on "the increasing scope of a rational comprehension of an enduring and orderly cosmos."[30]

Furthermore, in salvation religions, prophets draw together the cosmological and the social, infusing everyday life with cosmological strictures and practices. This orients the religious individual to "a unified view of the world derived from a consciously integrated meaningful attitude toward life."[31] Since salvation depends on "both social and cosmic events," individuals must pattern their conduct in a meaningful way. That is, systematized religion produces individuals that are oriented to impersonal and universal values. Integrated, rationalized worldviews cultivate a new kind of person oriented "to a cosmos of obligations."[32] Such people then act in more predictable or calculable ways – their action is formally rationalized.

In effect, Weber historicizes the basis of action itself. He provides an account of how people come to orient their action to a set of values that are not present or inherent in everyday life. Thus, the degree to which individuals pursue a cosmologically oriented life within a "meaningful, ordered totality" is itself the product of rationalization processes.[33]

This is the basis of Weber's explanation for the differences between the West, which produces capitalism, and other societies, which do not.[34] Weber's argument is that only Protestantism produced the right

[28] Weber 1978, 585, 1186. Cf. Kalberg 1980: 1151–58; Kalberg 2012: 39.
[29] Weber 1978: 431. [30] Weber 1978: 430. [31] Weber 1978: 450.
[32] Weber 1978: 430. [33] Weber 1978: 451. [34] Schluchter 1985: 156–66.

combination of theocentrism (orientation to a transcendent god), ascetism (control of self as the path to salvation), and this-worldliness (desire to realize God's will in this world):

> Only ascetic Protestantism completely eliminated magic and the supernatural quest for salvation, of which the highest form was intellectualist, contemplative illumination. It alone created the religious motivations for seeking salvation primarily through immersion in one's worldly vocation . . . For the various popular regions of Asia, in contrast to ascetic Protestantism, the world remained a great enchanted garden . . . No path led from the magical religiosity of the non-intellectual strata of Asia to a rational, methodical control of life. Nor did any path lead to that methodical control from the world-accommodation of Confucianism, from the world-rejection of Buddhism, from the world-conquest of Islam, or from the messianic expectations and economic pariah law of Judaism.[35]

This revision of the argument of the *Protestant Ethic* represents the culmination of Weber's work from 1905 to 1920.

In short, rationalization produces individuals who are meaningfully oriented to values. Moreover, those values fulfilled what Weber saw as the highest ideals of Western civilization: "autonomous yet compassionate and community-oriented individuals" that lived their lives in the pursuit of meaningful values.[36]

The rise of science enters the story here as one of a variety of sources that threaten values. In the Vocation lectures, Weber argues that scientific rationalization has profound effects on worldviews. Science teaches us that "we are not ruled by mysterious, unpredictable forces, but that, on the contrary, we can in principle *control everything by means of calculation*."[37] This knowledge leads to "the disenchantment of the world," culminating in the withdrawal of "the ultimate and most sublime values" from public life.[38] Science, for Weber, cannot replace those values because it cannot answer Tolstoy's questions: "What should we do? How shall we live?"[39]

The consequences of this, for Weber, are widespread and significant. The disintegration of ethical worldviews threatens the sociological basis of Western civilization. As Kalberg concludes:

> Weber could not discover an organization, class, or social stratum firmly anchored in modern Western societies capable of replacing ethical salvation religions as an institutionalized carrier of ethical rationality and value-rationalization processes . . . devoid of the personal dimension, the realms of economy, law, and science, as well as all bureaucratic rulership, now developed solely in relation to

[35] Weber 1978: 630. [36] Kalberg 2012: 41.
[37] Weber 2004: 12–13 (emphasis original). [38] Weber 2004: 13, 30.
[39] Weber 2004: 17.

external necessities and impersonal rules, laws, and regulations. These arenas thus remained outside of – and unrestrained by – all ethical claims.[40]

This led Weber to advocate a form of German nationalism in which moral obligation to the *Volk* would replace the passive instrumental rationality of the people.[41]

8.2.2 History

In this reading, Weber's account of rationalization is not grounded in a careful history of how ideas produced rationalizing elements. Rather, it is situated in Weber's attempt to make sense of Western distinctiveness in a world of difference.[42] The result is a totalizing and abstract image of rationalization as a universal and inevitable process. However, as Joas points out, we should not treat all the phenomena Weber identifies together under the umbrella of a single, universal process.[43]

Instead, we can unbundle modernity into a set of ideational and practical shifts linked together through contingent yet powerful complementarities. This may allow us to retain some sense of the overarching narrative of rationalization, in which the ground of action is transformed by long-term historical processes, without positing the necessity and unavoidability of disenchantment. My approach to this unbundling is to show how cosmological elements from the scientific tradition were incorporated into European and American political traditions. On this account, rationalization is the folding of cosmological elements (materialism and object-orientation) into social and political discourses where they formed the basis of worldviews based on control.

Starting in the sixteenth century, early modern natural philosophy in Europe was dominated by a materialist and mechanist ontology.[44] A materialist ontology posits that the fundamental building blocks of the universe are physical entities. A mechanist ontology posits a world that is governed by formal and efficient causes.[45] Forged together in a system of discursive complementarities, early modern materialism and mechanism offered a vision of the universe as lifeless matter in motion.

[40] Kalberg 2012: 41. [41] Shilliam 2008: 157–58. [42] Shilliam 2008: 159–62.
[43] Joas 2017: 1.
[44] I am using the term broadly and somewhat anachronistically to include progenitors of the natural sciences such as "natural philosophy," which was a distinct and broader set of practices in early modern knowledge production. See Shapin 1996; Shapin and Schaffer 1985.
[45] Collingwood 1945: 97–99.

Materialist and mechanist ontological claims developed in opposition to a variety of vitalist and organicist views. Vitalist writers depicted a pluralist world of living entities in which nature operated as an agent.[46] Organicist thought emphasized not the power of interacting corpuscles, but the holistic representation of nature and the world as living entities. A pluralist world of living organic wholes was far messier and less predictable than the rationally legible world of mechanically interacting matter. Perhaps this explains why Calvin himself, who was so central to Weber's story of rationalization, joined natural philosophers in opposing the "filthy dog Lucretius" and other vitalists.[47] Calvin admired the "exact diligence" of the astronomers because it revealed the "cunning workmanship" of God's providence.[48]

Other religious scholars attacked mechanism on the basis that it restricted God's will and depended itself on a form of vitalism. Henry More, a seventeenth-century Cambridge philosopher, argued that mechanists implied that matter had "freedom of will" and the "knowledge and perception" necessary to act.[49] Instead, More suggested, "an Immaterial Being" was responsible for making matter move. Along these and other lines of contestation, materialism and mechanism were disputed ontological claims through the seventeenth century and into the eighteenth century. As such, materialism and mechanism did not fully displace existing traditions of thought and practice. They had to be worked into creative networks of complementarities alongside existing discourses and practices.

The broad acceptance of Newton's view of the universe finally achieved in the eighteenth century can largely be explained by the fact that it was compatible with and could be drawn into religious worldviews.[50] Newton's image of a rational, law-governed cosmos was consistent with the Christian belief in an omnipotent God that had created an ordered universe. Moreover, Newton, consistent with his own theological impulses, left room for God in the mysterious operations of gravity. This was consistent with More's immaterial mover. It was also the reason Newton was denounced for relying on "occult forces."[51] The Newtonian view of the universe was not disenchanted. And it was stabilized through its relation to Christian ritual and political power.

Although strict materialism has been contested since its emergence, it has dominated scientific views of nature for centuries. A sure sign of its power is that even those, such as Newton, Kant, and Weber, who argued

[46] Boaistuau 1581. [47] Calvin 1561: 16. [48] Calvin 1561: 15.
[49] Henry More, quoted in Shapin and Schaffer 1985: 211. [50] Gaukroger 2007.
[51] Crombie and Hoskin 1970: 49–51.

against materialism had to adopt the dichotomous division of the world into material and ideational forces.

The material–ideational division played an important role in the development of the colonial social sciences in the nineteenth century.[52] In the shadow of Darwin, social anthropologists in Britain and elsewhere grounded their understanding of the new object "society" in a biological conception of humanity. Famously, Darwinism contributed to the rise of scientific racism in late colonial Europe. However, in British colonialism, scientific racism was less influential than social anthropology. Early anthropologists such as John Lubbock and Edward Burnett Tylor espoused a theory of sociocultural evolution on which peoples, conceived as distinct entities, developed along a linear sequence from savagery to civilization.[53] This formed the basis of the British Colonial Office's position that colonialism was necessary to shepherd primitive societies through the process of development. Scientific racism was unsuitable for this doctrine because it suggested that inferior races could never attain civilization. Instead, British colonial officials believed in their own racial superiority and that their native charges could progress toward civilization.[54]

Malinowski and his students later came to dominate British anthropology and played a central role in British colonial policy.[55] Such connections to colonial practice were not incidental, but an integral part of the network of complementarities that stabilized and supported Malinowski's work. Malinowski's "functionalist" anthropology posited a system of basic institutions that served to fulfill basic human needs.[56] The task of the anthropologist was to understand what function otherwise mysterious behaviors served. So Malinowski and other functionalists advocated for anthropologists to deeply immerse themselves within the social fabric to discern the true meaning and purpose of basic institutions, rituals, and beliefs.

The sociocultural and functionalist conceptions of society were not materialist in a reductive sense. Anthropologists in Malinowski's tradition did not posit that race or biology was destiny. But it was materialist, and disenchanted, in a different sense. On the functionalist view, the basis of society is an aggregate of material bodies, and the only forces legible to social science are ones that register for those bodies. To be sure, societies are formed by bringing together individual bodies in a set of institutions, bound together by ideas and practices. But, as Malinowski and the

[52] This follows Allan 2018: 156–202. [53] Kuklick 1978: 98. [54] Lorimer 2009: 194.
[55] Mills 2002. [56] E.g. Malinowski 1922.

functionalists made clear, the ideas were not really considered to be constitutive of peoples.

In colonial anthropology and imperial practice, ideas had only a functional relation to peoples: they help groups solve practical problems. Culture was a means of satisfying "basic individual biopsychological needs," and was merely a generalization of kinship relations and economic structures, not a "systemic milieu" in which relationships were constituted.[57] Thus, any set of ideas which resolves the material problems of existence or Darwinian survival are just as good as any other. Hence, the normative value of colonialism and assimilation: they provide a better set of ideas to meet material needs in superior ways. In an ontological sense, this theory separated cultures from peoples. Doing so justified colonialism as a system for guiding peoples to better, more functional sets of beliefs. We can see here how colonial worldviews could draw sustenance from scientific cosmological elements.

That separation was related to a broader ontological and epistemic shift: the proliferation of "epistemic objects" after 1830.[58] These objects – society, labor, public health, the economy, and so on – divided the world into distinct spheres of action. The emergence of "society" was important because it made possible the rise of the social sciences generally.[59] It was first conceptualized in the eighteenth century as an "aggregation of human beings that have come together for a certain purpose," as in a society of engineers. But by the end of the century, it emerged as a third sphere between households (the subject of the moral sciences) and the state (the subject of political economy).[60] Once created, the concept had a profound effect on social practices. An autonomous society could have effects on individuals and institutions, legitimating ideas like the "social welfare state." The concept also initiated a process of demarcating other spheres and subspheres, proliferating the objects of the social sciences.[61]

Once demarcated, such spheres could be measured with statistical techniques. In the early decades of the twentieth century, these objects were conceptualized as cybernetic systems governed by law-like mechanisms. The social sciences promised to uncover these mechanisms. This altered the basic terms of government which were now responsible for managing these objects.[62] The proliferation of object-experts enabled government interventions designed to change the dynamics of the objects.

[57] Stocking 1987: 321. [58] Daston 2000; Wagner 2003. [59] Wagner 2000: 133.
[60] Wagner 2000: 134. [61] Wagner 2000: 140–48. [62] Foucault 2007: 68–79.

Kusch argues that the roots of this phenomenon lie in the merger of Kantian thinking with technological advances:

> This revolution consists in installing and mobilizing a world of objects *outside* a subject. That is why, from simple sickness to the vicissitudes of our physical and spiritual life, we always find the solution or the *reason in this outside*. And an *outside* is always given: from the simple *reason* that explains to me the cause of my sorrow to a large administrative issue that could become concretized in an Agricultural Extension Office.[63]

Understanding and action are premised upon the separation between the inside of the subject and the outside of the world of objects. And, as we have seen, that outside is defined in material terms as dead matter in motion.

It is this separation that makes Weberian value-orientation possible and natural. As in functional anthropology, we as subjects are separate from the world of ideas and artifacts. We can pick up and use elements of the outside as we choose. This basic frame fuels the valorization and naturalization of reason. Reason could now be conceptualized and defined in means–ends terms as knowledge of the outside for the manipulation of the outside in the service of internal ends. Rationality itself is a value-orientation.

This shift underlies the scientific forms of rationalization identified by Meyer and his coauthors. They argue that on the dominant culture of world society, "salvation lies in rationalized structures grounded in scientific and technical knowledge."[64] The widespread authority of science underwrites and benefits from a process of rationalization in which all actors are expected to use scientific and technical knowledge to solve problems.[65] But it is important to precisely state the effect of science here: it established a discourse in which the world is populated with material objects that can be defined in scientific terms.

Reason is then the task of gaining understanding and exerting control over these objects through means–ends rationality. The desire to control the world through experiment and action is also not natural. It too emerges from this history in which a materialist world of dead matter is displayed as a series of manipulable entities. The image of the scientific experiment, in which nature is carefully controlled to produce reliable information and outcomes, is part of a broader constellation of ideas that are incorporated into the Newtonian worldviews of the social sciences and the modernist worldviews that shape world politics.

[63] Kusch 2010: 12–13. [64] Meyer et al. 1997: 174. Cf. Meyer 2010.
[65] Meyer et al. 1997: 166.

In my retelling, Weber's idea of rationality itself is a product of history. Kant of course assumed the existence of an a priori reason. But multiple subsequent traditions in social theory have sought to show that the grounds of rationality are themselves embedded in history. This is precisely what defenders of rational worldviews miss.[66] Indeed, Weber himself built a worldview on the concept of rationality. On the one hand, Weber valorized rationality-as-value-orientation under Protestantism. On the other hand, he critiqued rationality-as-disenchantment. His desire to diagnose the distinctiveness of the West led him here.[67]

From here, we see that the concept of rationality deployed by Weber is not a natural object but a product of the history of rationalization that he himself identified. The systematization and standardization of action across spheres reflects the emergence of cosmological elements from the natural sciences in political and social discourses. Further, it reflects a long process of forging complementarities between materialism, mechanism, object-orientation, and other ideas. These ideas draw strength from one another to form powerful and persuasive networks of meaning. These networks can then be variously mobilized in specific worldviews.

Moreover, once we conceptualize the process of rationalization at this level of detail we can see why it does not eliminate values or value-orientation amongst individuals by draining discourses of meaning. Scientific rationalization provides a different set of ideational elements through which values can be constructed. Newtonian and Darwinian representations of the cosmos and humanity became the basis of many political worldviews.

In sum, rationalization processes change the conceptual material from which worldviews are made. This constrains and influences worldviews, but does not determine them. This balances the roles of structure and agency as laid out in Section 8.1. Structural processes like the movement of scientific ideas into political discourses have broad effects, but those effects leave room for creative action to forge worldviews and the networks of complementarities necessary to stabilize and mobilize them.

8.2.3 Rationalization in the Social Sciences

Katzenstein's opening to this volume argues that we social scientists are stuck within Newtonian worldviews.[68] This section develops a related theme: materialism and object-orientation are part of the broader cosmological inheritance that enframes the social sciences today.[69] Further,

[66] Haas and Nau, Chapter 2 . [67] Boatcă 2013. [68] Chapter 1.

[69] To be precise, however, as my discussion of Newton suggests, Newton himself was not a materialist in the early modern sense. Nonetheless, he worked within the dichotomous discourse that movement produced.

building on Shilliam, I want to argue that the social sciences rest on rationalized, disenchanted discourses. The disenchantment of social science, which Weber himself struggled with, makes it harder to represent nonmaterialist elements and to take seriously the power of religion and cosmology.[70] From here, we can see how the coloniality of the social sciences in its functionalist, object-oriented mode separates peoples from cosmology at a basic level.

In Shilliam's retelling, the story of the Haitian revolution usually notes two events in the build-up to the insurrection on August 22, 1791. On August 14, there was the "properly-political" meeting of slaves and workers at the Lenormand de Mézy estate. Ostensibly it was here that the revolution was born as creoles, drawing inspiration from the French Revolution, plotted anticolonial rebellion.[71] On August 21, after two estates were prematurely set ablaze, there was a hastily arranged meeting of chiefs at Bwa Kayiman. There, Dutty Boukman, an early leader of the revolution, presided over a ritual with Cécile Fatiman, a Vodou priestess. The next day, the revolution began, and 184 sugar plantations were destroyed in the ensuing weeks. This second meeting is generally considered to be "merely a religious Vodou ceremony" that provided a signal to initiate the rebellion.[72]

Shilliam argues that the colonial nature of social science excludes the possibility that the meeting at Bwa Kayiman exerted a real effect on the revolution itself. To do so, he highlights the importance of what he calls "African retentions" in Haiti. In 1791, half of the 500,000 slaves in Saint Domingue had arrived in the previous five years, and two-thirds had been born in Africa.[73] These people carried with them diverse cosmological traditions from the African continent. Thus, the meeting at Bwa Kayiman reflected African cosmologies, political hierarchies, and national groupings.[74] Shilliam describes how the meeting brought together chiefs of African nations with *lwa* (spiritual agents).

At Bwa Kayiman, Cécile Fatiman "is ridden by the *lwa* Ezili Kawuolo," the patron of secret societies.[75] The Vodou conception of the self is radically relational and not reducible to conceptions of a closed subject. In Vodou, a person's "seat of agency" can be "mounted" by a *lwa*. Via this mediation, a *lwa* can become an agent in the world, serving as a channel for cosmic forces. One of these forces is justice. In the context of a slave colony, mediation with the *lwa* is a means of bringing justice into the profane world:

> Mediating with the *lwa* allows the profanely enslaved to channel forces from the spiritual hinterlands that bypass and exceed the control of their downpressors.

[70] Shilliam 2017. [71] Shilliam 2017: 10, 2. [72] Shilliam 2017: 10.
[73] Shilliam 2017: 6. [74] Shilliam 2017: 6–7. [75] Shilliam 2017: 3.

The community is re-sanctified by gaining cosmic force and direction in the pursuit of justice: The *lwa* and the chiefs, moved to arms, gathered at Bwa Kayiman.[76]

In this account, Shilliam presents the *lwa* as agents of the revolution: "If the *lwa* were not gathered at Bwa Kayiman with the chiefs, then there would have been no revolution."[77] Shilliam asks, what moved the people? "If the people did not *know* that the *lwa* were riding (with) them to burn down the plantations, then they would not have moved their feet."[78]

The problem is not only that social science cannot capture the power of the *lwa*. That is certainly the case: the secular terms of colonial social science must declare the *lwa* "supernatural" and thereby render them inert and absurd.[79] But regardless of whether or not one is willing to entertain the possibility of *lwa* agency, Shilliam's argument makes an important point: the colonial bias of social science makes the analyst privilege the causal significance of (white) legal-juridical acts over (black) cosmological ones.

Moreover, Shilliam's argument shows us what is at stake in the social scientific representation of ideas as separate from peoples. As Shilliam puts it, "colonial science seeks to segregate peoples from their lands, their pasts, their ancestors, spirits and agencies."[80] That is, by denigrating cosmological ideas as "super-natural" and "super-stitious," social science denies the constitutive element that ideas and spirits play in the formation of peoples.

This may seem like a counterintuitive critique of constructivists and ideational theorists a century removed from Malinowski. After all, cultural theorists argue that ideas make a "people" distinct from a set of biological individuals. But in colonial science ideas form peoples only in a shallow sense. The functionalism of materialist colonial science posits that a people is merely a set of biological bodies appended to a set of ideas. Those ideas fulfill functional, practical purposes. But functionally equivalent ideas are all interchangeable. There is no regard given to the specific cosmological heritage of peoples. Such ideas, and therefore peoples, have no specific ontological status as unique, or culturally valuable, entities in and of themselves. Diversity and pluralism refer not to the products of specific complex histories which form distinct cosmological-geographical-biological entities. Rather, diversity and

[76] Shilliam 2017: 14. [77] Shilliam 2017: 23. [78] Shilliam 2017: 23.
[79] Shilliam (2017) points out that colonial science needs the category "supernatural" to distinguish itself from myth. Further, Shilliam refuses to give in to this colonizing move, declaring "the *lwa* are not super-natural, they are other-wise" (2017: 23).
[80] Shilliam 2017: 8.

pluralism are mere numerical terms, referring to the proliferation of traditions, each with the same status within social science.

8.3 Interlude: On Parks in Social Science

On Saturdays, my daughter plays soccer in Druid Hill Park, a short drive from my home in Baltimore. The park opened in 1860, just two years after Central Park in New York. Druid Hill is similar in size to Central Park and is also surrounded on all sides by the city. But unlike Central Park, Druid Hill is not contained within Manhattan's rigid grid. From above, Druid Hill looks more like the head of a dinosaur in profile. The park features the usual amenities: biking paths, soccer fields, and pools (which used to be segregated). But large sections of the park are left as forest, having never been landscaped.

I am happy in the park – between a rationalist, ordered garden and a relationalist forest – if it means I value and pursue a kind of general social science despite my processual and historicist commitments. But I don't think parks should be monocultured. They should have a plurality of places to allow for a plurality of activities, all of which reflect the diverse and changing needs of a city.

Some theorists might suggest that taking history, process, and coloniality seriously means we must jettison any pretense to social scientific explanation.[81] On such a view, a project which posits worldviews as a force in world politics is misguided. The inherent instability and undecidability of meanings implies that any attempt within International Relations (IR) to fix a meaning to the world is an act of power.[82] As such, it tells us more about the productive power of IR as a discipline than it does about the world we purport to explain. Many theorists are unwilling to be complicit in the modernist productions of IR theory, and thus they adopt a critical stance against general or middle-ground theory.

Working from similar ontological premises, I draw a different conclusion. Social science theory in a processual mode can still strive to create general or middle-ground theories. But the purpose of those theories is not to create a catalogue of laws. Rather, it is to provide an agile base for an experimental approach to politics.[83] Theories, like worldviews, orient us in an uncertain world, allowing us to juggle multiple causal factors, see trade-offs, appraise opportunities, and engage with the world in novel ways. General theory need not be modernist, nor strive to disembody its objects from their contexts. Rather, by mapping the complexity of social

[81] See Doty's (1997) critique of structuration theory in IR. [82] Doty 1997: 387.
[83] See Katzenstein, Chapter 1.

worlds within legible frameworks, we can provide a flexible starting point for understanding and action without the dream of control.

Moreover, precisely because IR wields productive power, IR needs scholars who are willing to draw critical and modernist traditions together. Rather than leave the mainstream safe to ignore the importance of structural power, creative agency, history, and relationality, at least some of us should work to destabilize and change the conventional wisdom.[84] A starting point here is to use social science concepts to narrate and understand the complexity of social reality. But our concepts have to be located within a deep history alive to its contingencies and instabilities. Take for example the concept of worldviews. If we take Weber's arguments about the emergence of worldviews seriously, it does not make sense to apply the concept without historical and social scope conditions. We cannot simply interpret history such that every actor has a worldview or value-orientation. But under the right conditions, worldviews are a useful tool for explaining the actions of individuals and groups.

Moreover, with Shilliam, we need to turn from the critical interrogation of concepts back to history. Decolonizing our concepts allows for new interpretations that more vividly capture the differences that mark the social world. Placing our own work in the colonial history of social science allows us to see without the constraints imposed by the coloniality of our discipline. From there, we might be more open to the values and commitments offered by other worldviews, cosmologies, and modes of life.

From this vantage point, Haas and Nau's defense of individualism in this volume is unpersuasive because it ignores the history of the concepts they themselves deploy. They argue that "individuals can be educated liberally to become self-critical and eventually form and change their worldviews on rational and accountable grounds."[85] There is much to admire in their defense of agency and liberalism. However, it is important to note that their rationally ascertained liberal individualism is itself the product of the historical conceptual developments partially outlined earlier. Any choice of worldview is itself highly structured by historical inheritance. And if the choice is considered rational, the room for agency has been delimited further. Choice is never complete. Choice of worldview is itself is a negotiation of relational connections to history, education, and other agents in our lives.

But, more deeply, Weber would say that we, as products of rationalization, are the inheritors of a rationalized frame of action which orients us to

[84] See Katzenstein, Chapter 1 on locating this conventional wisdom in the terms of this volume.
[85] Chapter 2, this volume.

certain kinds of values and exposes us to the risks of disenchantment. We do not have "natural" worldviews. As much as we may want to go back to unquestioning enchantment, we cannot. This is precisely the challenge Shilliam presents us with: even if we try we cannot, from within social science, posit the agency of the *lwa*. So, the idea that we can and should rationally choose a worldview expresses a cosmological development we cannot undo. But we can grapple with and bring the tensions of our own rationalized history into our practice as critical, yet theoretically ambitious social scientists.

In the end, the difference between Haas and Nau and myself lies not in whether we acknowledge the fact of agency, but in where we locate it. Haas and Nau show agency at the surface: connecting up variants of the modernist, economic worldviews across the lines of the Cold War. Their argument is convincing, but it misses the cosmological backdrop which constrained the actors by placing them within a particular political landscape. This is not to say the actors did not exhibit real human agency – they did! But that agency is already relationally constituted in the sense that it was made possible by the configuration of historical inheritance and interactions with other actors.

In Druid Hill, the landscape upon which the children play is already ordered by history (and its messy configurations of knowledge, power, and agency). I cannot look at the swimming pools there without seeing the ongoing and present legacy of segregation and apartheid in my city. Whatever I do today does not erase that inheritance. Power is present in the landscape.

8.4 Conclusion

I take inspiration from processual and critical perspectives that offer relational views of the world, but I think we can put relational concepts to use in the world. I realize any attempt to assert knowledge is a play of power – one that could fall into colonial ways of thinking. But I personally feel a responsibility to act anyway, to fix meanings that I think are accurate and will have good effects on the world. This implies the necessity of a reflexive perspective. This reflexivity should be grounded in history.

My own historical work implies that our knowledge as social scientists acts as a channel for cosmological elements to enter political discourses.[86] Inspired by this, part of my intellectual project is to draw on alternative ontologies and epistemes and use them to refigure social science concepts to make more room for creativity, contingency, and change. In bringing

[86] Allan 2018.

processualism and history into the social sciences I seek to weaken the hold that materialism and object-orientation have on the social sciences today. This is not the same as advocating a worldview, but I do think that this work is important to the goal of deflating modernism and increasing ecological sensibilities in the long run. This supports the gambit that Katzenstein, Kurki, and others make: alternative scientific knowledges, such as quantum mechanics or ecology, could be harnessed to rework existing material and object-based conceptions of reality. This would provide a new platform for relating worldviews and cosmologies, as well as producing new ones. Staging this conversation in a nonhierarchical, decolonized manner is an urgent need in the social sciences, and in world politics more broadly.

Perhaps in a relational social science we could consistently enact a vision of selves and peoples that are deeply constituted and transformed by cosmological ideas. But that, I think, would require not just a different ontology but an earnest grappling with the basic colonial categories and impulses that still shape social science. After all, the social sciences are oriented, albeit inchoately, to social control. We still strive to create models of objects that allow the state and other actors to make targeted interventions. Moreover, the social sciences are poorly suited as a guide to the kind of inter-cosmological conversations that would help us relate different groups in nonhierarchical ways. Thus, we need to bring in resources from other traditions to work with our colonial past.

One promise of a decolonized, relational social science is that it might help us rethink the central problem of politics in a processual ontology: moving people. Tilly's flattening of power into mobilization could be put to use by a social science that no longer reduces motivation to material, rational interest.[87] An alternative model of social change would take seriously that we need confidence in our actions – we need to *know* the *lwa* are with us. More than a proper map of the world, a social science which sought to intervene in the world would have to be a creative response to the world that cultivated faith in justice and collective action. However, to do that social science would have to recover some sense that action is more directly tied to cosmological inheritances, acknowledging that we are part of more complex relational wholes than our science allows us to admit right now.

Returning to Weber, this insight from Shilliam provides an alternative reading of disenchantment in the West. Perhaps disenchantment is a loss of faith in cosmology itself. And perhaps we can reclaim cosmology without resorting either to tongue-in-cheek spiritualism or to nationalist

[87] Tilly 2003.

proxies (per Weber). Instead, we can posit that history is cosmological. The histories of peoples are histories forged within and through cosmological elements that leave their traces in stories, institutions, and family traditions. This creates a real cosmological inheritance that cannot be abandoned.

In this framing, we do not choose a cosmology, but inherit cosmological traditions that place various resources for meaning-making at our disposal. It is the creative act of weaving cosmologies from these resources that provides the promise of mobilization with some element of enchantment. Cosmology can be treated as a real source of enchantment while being seen as the product of history.

From this vantage point, we can take cosmology seriously while maintaining a reflexive and critical stance in regard to cosmological inheritance. This reflexivity can help us guard against unreflective nationalisms and racisms that may creep alongside the valorization of cosmological tradition. Grounding ourselves in a relational and processual understanding of history, without reducing people's histories to pure function, could enable us to reclaim vivid and meaningful cosmologies.

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