

# Book Review Essay

## Rare Earth Politics across Time, Space, and Scale

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Kalantzakos, Sophia. 2018. *China and the Geopolitics of Rare Earths*. Oxford, UK: Oxford University Press.

Klinger, Julie Michelle. 2017. *Rare Earth Frontiers: From Terrestrial Subsoils to Lunar Landscapes*. Ithaca, NY: Cornell University Press.

The seventeen elements on the periodic table collectively known as “rare earths” or “rare earth metals” moved from a mostly ignored topic in middle school science classes to front page news in every major newspaper and a top level concern in every foreign ministry, seemingly overnight. By now, most know that they have become critical in high-tech electronics, communications and energy sectors, among other uses. And global demand for rare earths has grown substantially since the 1990s. More surprising to many is that rare earths are not rare. There are lots of them, in many parts of the world.

There is no “Persian Gulf” of rare earth reserves. But their production is not distributed globally; rather, they are highly concentrated in China, which has what Sophia Kalantzakos calls a “near monopoly” on these globally critical resources. This fact helps to explain why rare earths are now famous, and infamously politicized.

The two books reviewed here have much to teach us, but they embody very different world views, conceptual frameworks, and methods. While there is no evidence that they were written to be explicitly in conversation with one another, they nevertheless embody that conversation.

In 2010 rare earth exports to Japan from China were halted or heavily restricted. Almost instantaneously, China was perceived by many in Japan, the United States, and the European Union (EU) as strategically leveraging its near monopoly on rare earth elements in territorial disputes in the East China Sea. These developments prompted nearly two years of high-level diplomacy, a flurry of tripartite industrial policy efforts among the US, EU, and Japan, rare earth price spikes, and substantial economic anxiety in many areas of the private sector. That

this period quickly became known as the “rare-earth crisis” captures the reactions and anxieties of the era quite well. Once the “crisis” passed, China retained the dominant, nearly monopolistic position it held before prices fell to acceptable—some say even cheaper—levels, and the attention of presidents, prime ministers, and foreign ministers moved on.

The central question animating Sophia Kalantzakos’ *China and the Geopolitics of Rare Earths* is this: “Was the rare earth crisis really just a temporary glitch in the international system, without subsequent political and economic repercussions?” (pp. 5–6). Spoiler alert: Her answer is no. Kalantzakos details how and why demand for rare earths has grown, and how and why China came to dominate the global market for rare earths. Along the way, she explores historical comparisons to two other strategically important resources: salt and oil.

Kalantzakos’ overarching perspectives are perhaps best summarized by the title of chapter one: “Resource Competition, Mineral Scarcity and Economic Statecraft.” Certainly she is correct that resource competition, especially among some great powers, has not gone away. She is also right to suggest that an energy transition away from fossil fuels toward cleaner and more distributed solar and wind, shifts or changes—rather than eliminates—resource competition related to energy. While traditional, inter-state, geopolitical competition is unlikely where sun and wind are concerned, the material resources and production required to capture them has the potential to engage old-school economic statecraft. While the book suggests that strategic resource competition is likely and ongoing, it also focuses on the capacity of states to address this competition through a combination of domestic policy and international cooperation. Kalantzakos suggests, in a host of ways, that China’s capacity—and sometimes willingness—to pursue economic statecraft to the disadvantage of more open-market democracies is substantial in contemporary global politics. For her, the rare earth crisis and its legacies illustrate the endemic risks in contemporary global resource competition. In this context, she covers the Obama era “pivot” to Asia and Trump-era criticism of and confrontation with China. In short, chapter one is much more about a realist and mercantilist view of China and global geopolitics than it is about rare earths. The rare earth crisis and its aftermath are then addressed in this context.

The “salt and oil” chapter offers a number of “strategic parallels” to rare earth politics, in Kalantzakos’ analysis. Both resources ascended to dominant positions in human political and economic development, and both were the subject of substantial trade and economic statecraft. She mines both commodities for some interesting lessons, but her focus on “China’s oil policy” betrays the major analytical weakness or limitation: Kalantzakos’ geopolitical perspective and economic statecraft lenses seem to apply almost exclusively to China, rather than to the whole international system or to other major state actors. Following her review of Chinese efforts, via foreign economic, security and aid policies related to oil access around the world, this sentence stands out: “China’s approach to securing oil speaks volumes as to how it thinks of strategic resources”

(p. 116). She further notes, “It would perhaps behoove us not to ignore telling acts of *realpolitik*,” essentially because “those small quantities of rare earths are just as vital” as oil (p. 116). First, this comment seems to suggest there is much to gain by applying the dominant *realpolitik* approach to securing oil to the acquisition of rare earths. But which parts of historical or contemporary oil geopolitics are worth emulating? Second, it also seems that we are asked to believe that US, EU, and Japanese policymakers and corporate actors have forgotten the strategies they used to secure petroleum access and supply. Why does the book’s *realpolitik* approach to state behavior apply only to China?

China’s dominance of rare earths production, markets, and global supply has real consequences for international politics—and for domestic politics in China, about which Kalantzakos has less to say. But reading the events and current situation only through the lens of Chinese economic statecraft limits what we can learn. Why not also read it through a lens focused on the logics of monopolistic capitalism undercutting all competitors in search of market control? Why not ask what lessons can be learned from OPEC’s rise and fall—and that of other cases from the glory days of international cartel building and collapse? The OPEC example seems especially instructive, given its members’ hard-learned lessons about damaging their primary markets and the organization’s general failure to control prices over the last three decades.

Certainly international resource dependence continues to worry many states, firms, and publics when access and supply are essential and asymmetric—as the rare earth crisis demonstrates. But other approaches yield other lessons. The United States, European Union and Japan did cooperate to accelerate research, development, and industrial policies to reduce their dependence—some of this likely spurred by the temporary spike in rare earth prices. They also cooperated to bring complaints about Chinese policies to the WTO. What of the logic of interdependence, given (as Kalantzakos discusses) that China eventually lost the WTO ruling and subsequent appeals and seems to have complied with WTO rulings and expectations? The rare earth crisis did not lead to massive economic costs or to interstate violence, and the prices returned to “normal” within a couple of years. Dan Drezner might say that it looks like “the system worked” (Drezner 2014), at least to avert economic, security, and political disaster.

As the book title suggests, Kalantzakos remains almost exclusively focused on geopolitical—that is interstate—resource competition. While she does discuss the environmental implications of rare earths mining and production, this focus is not central to her analysis. Julie Michelle Klinger’s *Rare Earth Frontiers: From Terrestrial Subsoils to Lunar Landscapes* contrasts with Kalantzakos’ approach in a number of ways. Klinger’s conceptual and theoretical frameworks are rooted more in political and human geography—while drawing on considerable social science research from political science, sociology, and elsewhere—than in international relations theory. Klinger’s approach yields a project that runs across scales (individual, community, national, global) and takes us through subsoil,

sea beds, the arctic, and the moon. Like Kalantzakos, she covers a host of developments before and after the “rare earth crisis” around 2010–2012, although she avoids the term itself and would not be inclined to use it un-critically, instead calling attention to what she calls “hyperbolic” behavior, reaction, and commentary. Klinger agrees that rare earths are indeed not rare, but this fact plays a much different role in her analysis. Among other questions, she wants to know why a few sites around the world—among hundreds of possible locations—came to dominate either production or debates about potential production. How to explain the geography of rare earths production and the geopolitical superstorm raging around rare earths?

Rare earths are expensive to mine and process, and like most mining operations, the ecological and human health impacts of extraction and processing are quite substantial (Auld, Betsill, and VanDeveer 2018). Mining produces massive quantities of waste, and processing can be energy-, water-, and chemical-intensive. Each of the seventeen elements has unique properties, and their uses are often not easily substitutable. Many require differing processing technologies, expertise, and other inputs. These facts play different roles in the two books.

Klinger’s book also situates ecological, human health, and community degradation much closer to the center of her analysis. While Kalantzakos’ book is primarily concerned with interstate resource competition, Klinger treats this sort of analysis as part of what geographers often call the “territorial trap” of assuming that sovereign states have a *de facto* primacy in politics and authority. The book thus draws on geographers’ considerably more critical and politicized views of “geopolitics” (O’Lear, 2018). Unsurprisingly, Klinger’s book crosses and connects scale in much different ways than does Kalantzakos’ work. But Klinger certainly does not ignore state actors. For her, it is impossible to understand where rare earths are being mined—and where others are advocating they be mined in the future—without attention to those who would assert state dominance and authority.

Klinger deploys a complex conceptualization of “frontier” spaces, to understand why rare earth mining happens in some places, and not in the many others where deposits also lie. For her, these frontier spaces are those with “conflicting regimes of governance, law and property rights” (p. 231). These spaces do not simply have rare earths in the ground waiting for a mythical, market-driven invisible hand to pull them out. Rather, in China’s Inner Mongolia and in the Brazilian Amazon, rare earth mining investments and operations are central to asserting the authority of some over others. The mining is a central part of asserting territorial control, which includes the use of substantial violence and ecological destruction. In Klinger’s analysis, Chinese policymakers did not set out to establish a global rare earth monopoly, they set out to “conquer the Mongolian frontier” (p 101).

Klinger has done an impressive amount of fieldwork and other empirical research, visiting mining sites in China, Brazil, the United States, and

Greenland—with substantial fieldwork at two primary research sites in both Brazil and China. Her research also incorporates close attention to the histories of the primary sites. She does not pick up the rare earths story in the early 2000s, when the globally dominant market position was already established. Her fieldwork and historical explorations demonstrate that seemingly disparate, local developments are part of much larger and longer-term patterns. She also demonstrates that China's near monopolistic position was aided substantially by the neoliberal turn of the late twentieth and early twenty-first centuries. The explanations she advances are far more complex—playing out across time, space, and scale—than the usual international relations version often told in Washington and echoed in parts of Kalantzakos' book. Her analysis, as she notes, needs geology, imperialism, and nationalism—and the encounters of these forces with local and regional communities and conflicts—to tell the rare earths story.

Klinger's analysis in *Rare Earth Frontiers* takes two fascinating—and for some, likely quite surprising—turns. The first brings us back to the role of environmental and human health degradation, as well as to local, regional, and national politics in China. For Klinger, the story of the 2010 global rare earths crisis is not a story of traditional, interstate geopolitics. She chronicles “radioactive rivers and cancer villages” (p. 120) and a host of other horrors in China's rare earth mining regions. For her, “the rare earth frontier has literally cut through human bodies” (p. 135) and whole communities in ways reminiscent of Nixon's “slow violence” (Nixon 2013). Klinger argues that consensus about the terrible price of “growth at all costs” goals shifted in China in the early 2000s, as policymakers and local leaders moved to a more consolidated and (allegedly) better environmentally regulated or governed rare earths sector. The disruptions this transformation caused are as much a cause of the globally securitized 2010 rare earths crisis as were any clear foreign policy strategies. For those of us inclined to caution exclusively international level analyses against assuming away the importance of local and domestic dynamics, such cross-scale empirical research is highly valuable.

The book's other innovative turn is best captured by Klinger's attention to debates about lunar mining in the wake of the 2010 crisis. While she did not visit the moon, it does serve as the third of her analytical “primary sites,” after the regions of China and Brazil in which she spent so much time. Her work on the actors, discourses, and strategies used to construct the moon as a potential rare earth mining site demonstrates the value of her conceptualization of “frontiers” and illustrates the lengths to which some will go to assert control over such frontier spaces. While there are more than enough rare earth deposits on our own planet, some private-sector and state actors have used lunar rare earth mining to seek changes to, or the death of, the treaty establishing the moon and its resources as the common heritage of all mankind. In other words, mythologies about rare earths' scarcity are being used to construct the moon as a place that needs more sovereign state authority and clearly delineated private property rights. Even the moon is subject to territorializing state authority and its incumbent neoliberal

turn. Klinger shows that what's true for the moon was true historically in parts of China and Brazil, and it is still playing out in Greenland, Afghanistan, and other areas of Brazil.

Each book suggests that we have much to learn about international politics and governance—historically and in the current age—via more attention to the rare earth elements that have recently become collectively famous (but that few of us can name individually). Kalantzakos is right that the rare earths crisis left some lasting political and economic impacts among public and private sector decisionmakers and institutions, but it is not clear that her approach can identify the most significant of those legacies, and she is insufficiently critical of the narratives surrounding Chinese foreign policy. Klinger's book is exceptionally impressive in its conceptual, methodological, and empirical scope and ambition. Among other things, it demonstrates the value of escaping the territorial trap too often embodied in international relations theory and method.

## References

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