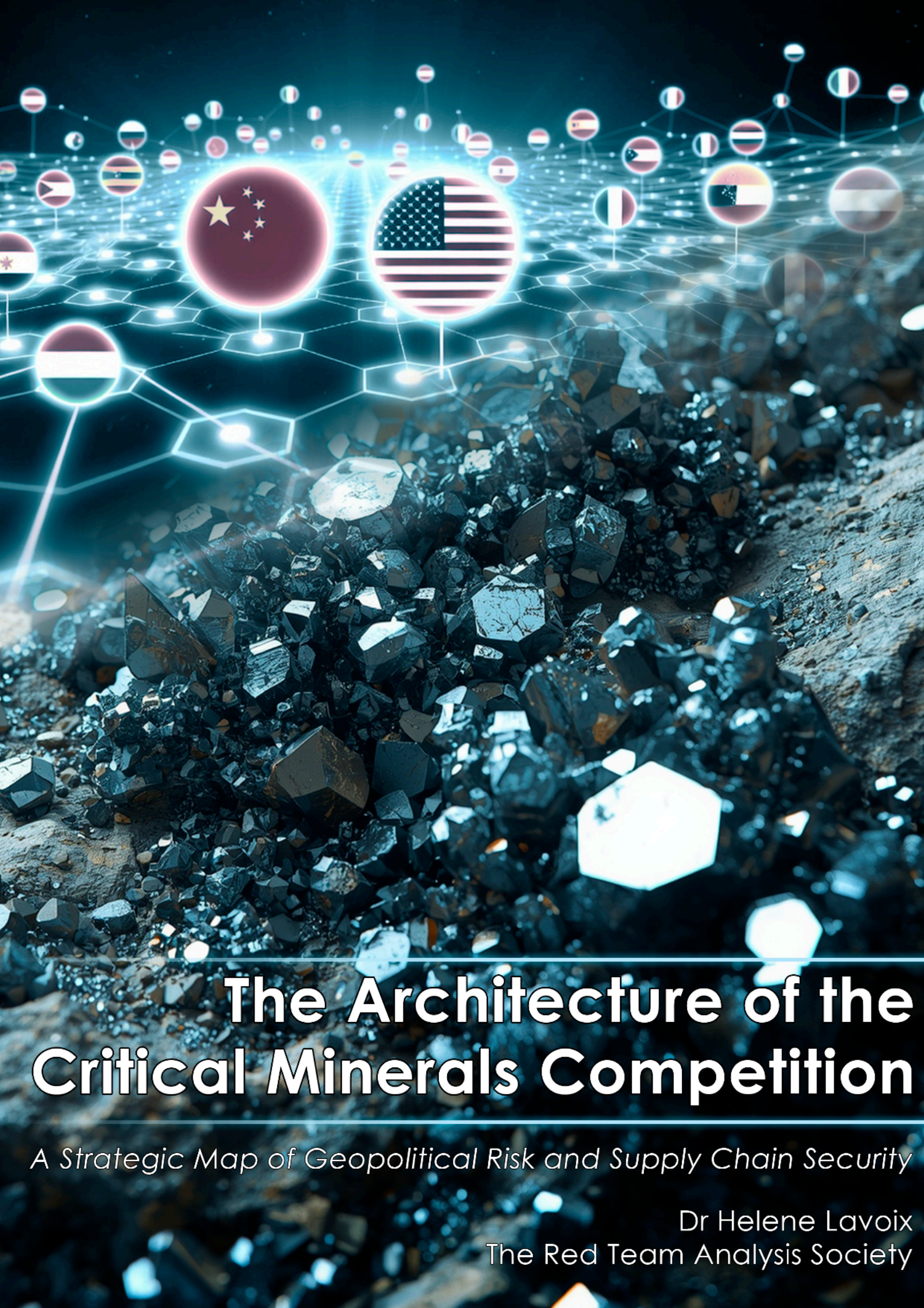




The Architecture of the Critical Minerals Competition

A Strategic Map of Geopolitical Risk and Supply Chain Security

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EXECUTIVE SUMMARY

The global competition for critical minerals is not only about market, economics, finance, or technical development. Geopolitics matters and even more so determines and structure the competition and the security of the supply chains. When international politics is taken into account, the global competition for critical minerals cannot be resumed to a simple bipolar struggle between the U.S. and China. We are faced with a complex system that must be modelled if we want to understand it and thus act constructively.

The core model of the global critical minerals competition we designed is a complex causal system involving 161 variables and 701 causal relationships, spanning national interest, perception, policy, material supply, and related dynamics, for the U.S., China, as well as, in a more generic way, the U.S. allies, U.S. partners and “countries”. This report, based on a causal network analysis, reveals the hidden structure of that system.

KEY FINDINGS

- The most powerful levers are not exactly what you expect. U.S. power matters, but first as a *capacity* to ensure national interest rather than as specific actions. The decisions and actions of individual countries matter as the second most direct and influential factors shaping the competition. They are not pawns in a big-power game.
- Perception is constitutive of structure. "Diplomatic skepticism" towards the U.S. is as directly influential as China's entire market dominance. Trust is a causal force, not a soft factor.
- The system's structure can shift. The formation of mid-power mineral alliances excluding the U.S. is the single most important structural pivot. These alliances would not just respond to the competition—they would fundamentally reorganise it.
- The quest for the security of critical minerals supply chain is not an insulated system but will depend on geopolitical tensions, escalation or stabilisation elsewhere.

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Nodes size according to Outdegree, colour according to modularity

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