

practical authority is something that the community is constantly (re)negotiating in practice. Here again, we see some conceptual tension between Adler's admirably relational intention and a substantialist way of speaking of the components of social life. Although the latter approach lends itself to a certain kind of theorizing, it comes at the cost of some ontological inconsistency.

But such consistency has never been Adler's primary analytical goal. He has consistently advocated a "middle ground" in his work over the years, and he admits to an "aversion to dichotomies" (p. 279) in the final chapter of this book. Instead of either/or, Adler invariably presents us with both/and: material *and* ideational elements, agents *and* structures, and, in this book, ordering practices *and* orders. The resulting richness in directing our attention to a variety of factors that can "explain the creative variation and selective retention of social orders" (p. 25) produces a subtle displacement in the notion of "explanation" that Adler's sustained focus on theory does not really acknowledge, because it is a *methodological* displacement. To explain with the conceptual tools that Adler has developed would likely point in a configurational direction, replacing any overarching direction with a careful specification of how elements combine to generate outcomes. That in turn would be in tension with the commitment to progress—even bounded progress—that is on display especially in the book's closing chapters, but here again, Adler does not want us to choose: once again, the answer is both/and.

And perhaps this is the most important thing that a theory that takes learning seriously can do: if the lessons we learn and the practices that we selectively retain shape the future in which we will live, the challenge of retaining both an awareness of contingency and a commitment to progress may serve as a spur to greater learning. Cognitive evolution may not have a final goal—no evolutionary process does—but it might have a *direction* if we practice it well.

The Eye of War: Military Perception from the Telescope to the Drone. By Antoine Bousquet. Minneapolis: University of Minnesota Press, 2018. 256p. \$108.00 cloth, \$27.00 paper. doi:10.1017/S1537592719004432

— Linda Monsees, *Goethe University Frankfurt*
monsees@normativeorders.net

What is the role of visual technology in the conduct of warfare? How can we understand warfare as a "struggle over visibility" (p. 3)? And what role do human bodies play in technologized warfare today? Antoine Bousquet provides an incredible, empirically rich account of the historical development of military perception technologies and their influence on the conduct of warfare. Although often concerned with specific technological features, the book never becomes dry, but is well written and offers a very nuanced account of how we can understand current

developments such as automated weapons systems as part of a broader historical development. As such the book is a much-needed contribution to the vibrant field of security technology, a body of scholarship that often strives for an analysis of the most recent technology while forgetting to place it in its historical context.

Bousquet opens with a brief history of the emergence of the linear perspective in the Renaissance. Without this invention all subsequent developments in perception and targeting technologies would have been unthinkable. Bousquet calls this revolutionary invention the "dual process of rationalization of vision and mathematization of space" (p. 23). Contrary to a naïve idea of the Renaissance, Bousquet shows that this invention did not unproblematically create the idea of a sovereign human subject but also made that subject and its visual perception "subordinated to abstract laws of vision" (p. 29). Although this chapter focuses on the history of linear perception, Bousquet hints at how certain visual techniques affected the conduct of warfare, thereby setting the tone for the rest of the book.

Chapters 2–5 focus on distinct aspects of military perception technology. Bousquet starts with a description of how the sensual perception of images became part of the infrastructure of warfare. Starting with a short detour about the invention of the telescope, the second chapter focuses mainly on the twentieth century. Bousquet organizes the first part of the discussion into four "orders:" aiming, ranging, tracking, and guiding (p. 64). He describes different devices from triangulation to missile-guidance systems that depended on pigeons for targeting the aim and shows how the conduct of warfare always relied on ever better techniques for identifying and targeting an aim. In the twentieth century sophisticated laser-guidance systems developed and thus expanded the repertoire to the invisible spectrum of light. Importantly, the reader also learns how mundane factors such as bad weather remain a major obstacle for the implementation of sophisticated technology. This is an important correction to widespread myths about the infallibility of technology and its tremendous capabilities.

The third chapter, "Imaging," concerns the capture and circulation of visual representation from the earliest photo cameras to the development of autonomous machine perception. Bousquet combines the description of early cameras with a discussion of the societal impact of these inventions, which relies on the extensive citation of philosophers. He traces the development of cameras from the nineteenth century to today's newest versions that are used in video gaming and military operations alike. The "total war" and the bombing of cities and industrial centers in World War II only became possible because of the improved means of observation from the sky (p. 97). The "verticalized photographic image" was crucial in fighting an "enemy conceived as a military-industrial totality" (p. 97). Today, the most sophisticated computer vision

systems work without any human input and are used in unmanned aerial vehicles (UAVs; p. 106).

Most readers will find these examples highly relevant and probably know something about the related ethical controversies surrounding them. Although Bousquet's work is not a direct intervention into these debates, his historical account puts these developments into context, making it possible to identify the unique features of today's most sophisticated systems. We are now imagining systems of visual representation that are not bound by a screen (p. 113) and are able to depict a three-dimensional virtual reality that dissolves the boundary between human beings and technology. Bousquet shows how new technology (which we might associate with cutting-edge computer games) is able to merge human perception with machine sensory depiction. For example, one of the most interesting technologies is a helmet for pilots that could track eye movement and hand gestures, as well as creating a "virtual cockpit" that would present not only different images of the immediate surroundings but also a threat warning system or terrain maps. However, this "Super Cockpit program never did reach fruition" (p. 117) and thus serves as only one of many examples in this book of failing technology. Throughout the book Bousquet gives examples of visionary technologies that were not implemented, thereby emphasizing that the development of technology is never as linear as we might think.

In Chapter 4, "Mapping," Bousquet focuses on the ever more precise techniques of mapping and how we can understand maps not only as a representation of reality but also as a social production of space. Today digital maps are also a "communication channel" and "cognitive enabler" (p. 143). Not only (but especially) in the military, maps are crucial technologies for orientation in the world. Bousquet discusses critically important geographers but also emphasizes the instrumental function of maps (p. 121). Maps can be "better" or "worse" for providing orientation. This seems like an obvious point, but critical scholars of technology tend to play down the instrumental function of technology in their attempts to problematize its impact.

The last substantive chapter, "Hiding," takes the previous empirical examination to its logical conclusion by examining techniques of camouflage. Although it makes sense to conclude with a chapter of counterstrategies, this chapter lacks the technical focus and details that make the other chapters more accessible. Bousquet describes different techniques of camouflage and highlights the influence of scientists and artists in their development. Here it becomes clear that many gaps in our knowledge about visual perception remain and that the science of camouflage is not understood completely yet.

The conclusion further develops the idea that technological development and the conduct of warfare are not only linked but also what this can tell us about politics more generally. Processes of targeting and identifying are

also processes of subjectification (p. 196). Where the classical political subject was a result of centralized forms of observation, today the object of targeting practices is also always its subject (p. 197). With this final chapter, Bousquet opens up the way to embed his empirical analysis in the broader development of the revolution in military affairs and the general societal effects of digitization that were hinted at in previous chapters. One wishes this part would have been developed more, because it would have allowed for a deeper understanding of perception technology from a political sociological point of view that takes seriously questions of subjectification, power, and order. Overall, this book will be of interest not only to scholars of critical military studies but also researchers interested in the history of visual technology and the technologization of security more generally.

Raise the Debt: How Developing Countries Choose Their Creditors. By Jonas B. Bunte. New York: Oxford University

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— Matthew DiGiuseppe, *Leiden University*
m.r.di.giuseppe@fsw.leidenuniv.nl

Credit and debt are essential to economic development and modern governance. As a result, the variables that affect a state's ability to borrow and the consequences of excessive borrowing are the subject of broad academic literatures in economics and political economy. Yet, scholars have had a blind spot in their approach to understanding the acquisition of debt. It was conventional, but untested, wisdom that all states had a similar preference ranking for the creditors from whom they would borrow. Private creditors, from banks or through bond issuances, are thought most preferred because their loans come with few strings attached and states are free to use the raised funds in any way they see fit. However, when states were deemed too risky and the cost of borrowing from private creditors was too high, they could potentially turn to official lenders, such as the IMF or World Bank, or bilateral loans for finance. However, as we know, these loans come with varying levels of policy concessions that can limit a government's autonomy, or they are dedicated to funding a particular infrastructure project. Given these assumptions, the pairing of creditors and debtors was largely assumed to be a supply-side phenomenon dictated by the availability of private credit and the willingness of official lenders to engage with a particular country.

Jonas Bunte questions this conventional wisdom in *Raise the Debt*. His central contribution is the argument that the pairing of creditors and debtors is also driven by domestic politics in borrowing states. In other words, both demand-side and supply-side dynamics are at work in this process. To develop a framework for understanding the