Stephen Chrisomalis, *Reckoning: Numerals, Cognition, and History* (Cambridge, MA: MIT Press, 2020), 288 pp.

"The Romans were not dupes." This sentence, found on page 46 of Chrisomalis's *Reckoning*, has the form of a constative statement but is actually a kind of performative utterance. It appears in a chapter dedicated to the Roman number system. In general, when we learn Roman numerals at school, we are also taught about the awkwardness of the system. Instead of the two characters needed to write *28* in the Indian-Arabic-Western ciphers (Chrisomalis notes the difficulty of speaking simply of the Arabic or the Indian system, since there is more than one of each), the Romans needed no fewer than six characters to write the same number, *XXVIII.* The Roman system, moreover, is not practical for the performance of even simple mathematical operations such as addition or multiplication. Why, then, did it last for almost two millennia? Why did it resist a dozen alternative systems known in Europe during that period? Yes, there *were* that many, as we learn from reading Chrisomalis, a specialist in the anthropology and history of numeral notations. In a previous book, he gathered and described in detail more than one hundred number systems that human societies have conceived and used. The present study builds on that encyclopedic work to ask more specific questions about the adoption, diffusion, and abandonment of numeral notations.

Chrisomalis devotes two chapters to studying the Roman system. He begins by explaining the error in reasoning made when we say that Roman numerals are not practical for algebraic operations. Presupposing that Romans and medieval Europeans used the numbers as we use our ciphers today is an ethnocentric projection: they did not count on paper (or parchment or papyrus) but always with pebbles or an abacus. They wrote down only the results of their mathematical operations, in part because of the high cost of parchment, but also probably because of the rapidity of counting with the abacus (as is suggested by the efficiency of the *suan pan* still used in China). Even if, moreover, Roman numbers on average require more characters than their counterparts in a positional system, the round numbers, which are largely more present in written texts, are actually shorter: *X*, *L*, *C*, and *M* for 10, 50, 100, and 1,000, respectively. So probably it was not purely mathematical or cognitive considerations that led to the abandonment of Roman notation. An advantage of using Indian-Arabic-Western ciphers was that doing so left marks that made the accounting needs of modern, international commerce easier to meet. The printing industry also helped to spread and impose the new system.

By stating that the Romans were not dupes, Chrisomalis seeks not only to overcome ethnocentric bias but also to situate numerals in their social and cultural contexts, analyze numbers as they have been used and not simply as abstract

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mathematical constructions, reject Whig historiography ("the history of computational perfection"), and open paths for the future ("we are not at the end of the history of numbers"). By looking for the intelligence of actors—by treating actors politely, as Isabelle Stengers would say—the researcher renders himself and his readers more intelligent. Sharing intelligence between the actors and the researcher, the predicate of the first becoming that of that second and vice versa, is a sign of successful work in social science. Hence the importance of Chrisomalis's short but powerful utterance on page 46.

—Thibault De Meyer

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Simon Critchley, *Tragedy, the Greeks, and Us*
(New York: Pantheon, 2019), 336 pp.

Who is the "us" of this book's title? is a riddle, perhaps, for Oedipus. Tragedy is, in Critchley's most sweeping formulation, "a genealogy of who we are, an account of our origins and how the curse of the past can unknowingly take shape in the present, and we don't see it and we rage when we are told what it is." The riddle only deepens. Tragedy shows us "who we are," but who is "we"?

Critchley's "we," it emerges, has some clear coordinates. His views on Greek tragedy reflect, more or less faithfully, what might be called the 1990s Anglo-American consensus (which in turn draws on the formative work of broadly structuralist French thinkers): Greek tragedy is an inherently political art form dedicated to exploring ambiguities of agency and subjectivity. Critchley offers a philosophically inflected version of this account, ostensibly drawing on ancient Greek thought, but more substantively formed by German Idealism. The outlines will be familiar to anyone who grew up within the consensus, which remains broadly compelling as an understanding of tragedy in fifth-century BCE Athens. Critchley is on the whole a thoughtful, well-informed guide to tragedy and the Greeks.

Critchley's account, however, is ultimately unsatisfying in the way it addresses tragedy and "us": it is relentlessly focused on individual choice and action, and on the category of the hero. But tragedy in this sense, as Aristotle reminds us, occurs only in a few houses. Despite the "us" in Critchley's title, nothing in the book addresses seriously the "we" of the present, for whom the greatest challenges are not "moral ambiguity" or "transcendental opacity"—two of the core experiences he locates in tragedy—but a burning planet, systemic violence and injustice, and rampant lies and falsehoods (to name a few). These are not just curses of the past,

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