

cf. 62). *The Renaissance's* “uniqueness” (272) turns out to depend, in other words, on a uniquely strong version of the break in continuity (“nobody else had lost their past in quite the same way” [260]) caused by the Western European Dark Ages and the subsequent domination of the Latin Church. *The Renaissance*, then, historically specific and with irreversible ripple effects, is indeed “*only* European” (my stress). There is no truck here with Eurocentrism or teleology, nor any lack of good faith, but simply a recognition that, some similarities notwithstanding, the Renaissance in Europe came about in conditions that were not replicated elsewhere—hence, was different from any renaissance.

Goody's historical diagnosis is correct, but a reviewer who moonlights as a medieval Europeanist raises an eyebrow over how he reached it. Medieval Europeans had not “lost their past,” nor was the Renaissance possible without multiple medieval renaissances, or even renaissances, Carolingian, Ottonian, and twelfth-century (Goody is familiar with these but discounts them), that effected new versions of Antiquity, and new fusions of these with other cultural inheritances, biblical, variously Roman, and variously barbarian, in which law and practical know-how (*scientia*) loomed large. Do many European renaissances a Renaissance make? If so, however labeled, they are not mere links in a chronological chain but documented phenomena whose relationships cumulatively suggest, even explain, a comparatively studied *social and historical* one—and Goody has done it again!

———Jinty Nelson, emerita, King's College London

Stephen Chrisomalis, *Numerical Notation: A Comparative History*. Cambridge: Cambridge University Press, 2010.

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What first strikes a reader of this impressive work is its sheer encyclopedic comprehensiveness. Whereas most authors might base their discussion of numerical notation on a few select examples, Chrisomalis is committed to including each and every known system of numerical notation that has ever been used by humans. This is an ambitious goal, but the author is up to the task: he identifies one hundred different systems that have been used from the 4th millennium BCE to the present day, and divides them into five “families” according to their shared origins and mutual influence. The systems on the list include some very familiar ones, such as our “western” and Roman numerals; some less so such as the Babylonian, Mayan, and Brahmi systems, the latter being the ancestor of Arabic and western numerals; and some truly esoteric ones such as the script developed by Sultan Njoya of

the Bamum people of southwestern Cameroon in the early decades of the twentieth century. Chrisomalis discusses all of them—their origins, structure, and development over time, and their ultimate decline if such occurred. This breadth of *Numerical Notation* is by itself a remarkable achievement, and it is hard to imagine any future scholar in this field who will not take its discussions as their starting point.

For Chrisomalis, however, the broad focus is not an end in itself, but a means to an even more ambitious goal: to deduce universal rules that govern the structure of numerical notation systems and their historical development. To accomplish this, he characterizes each historical system according to how it designates the powers of its base (“intraexponential” in his terminology) and how it combines the different powers to arrive at a specific value (“interexponential”). Using these parameters, he arrives at five different types of systems, the most prevalent of which are “cumulative-additive” (such as Roman numerals) and “cypher-positional” (including modern western numerals). These designations make it possible for Chrisomalis to compare the different systems and search out universal commonalities. They also enable him to track the historical development of systems over time, including transitions from one type to another and occasionally the replacement of one type by a different one. Here again, the author’s aim is to deduce rules of change that constrain the development of numerical notation over time.

By dividing his conclusions into structural (or “synchronic”) rules and rules of historical change (“diachronic” rules), Chrisomalis demonstrates a strong methodological point: Numerical notation cannot be explained solely by the universal requirements of human cognitive abilities, nor solely by the contingencies of historical circumstances. Both aspects are necessary to account for the range of different systems and their development. The implications of this point extend far beyond the limits of the subject at hand and into foundational debates in the broader fields of anthropology, sociology, and the history of science. In this context *Numerical Notation* serves as an empirical demonstration that neither of the extreme positions—universalism or relativism—is sufficient to account for the evidence in a specific field of study. Chrisomalis does not just argue for a middle position, but convincingly demonstrates that it is essential for any plausible explanation. He thereby makes an important contribution to a broad debate across all of the humanities.

The specific rules that Chrisomalis arrives at through his comparative analysis are perhaps the weaker part of the study. Consider, for example, structural rule G.2 (p. 363), which states, “All systems use a base of 10 or a multiple of 10 for representing natural numbers.” This is interesting, if hardly surprising given human anatomy, but it is hard to see how one can proceed beyond this general observation. It seems too broad, and constrains numerical systems too little, to lead to deep insights about their structure or development. Much the same can be said about the historical rules of change Chrisomalis presents,

such as “a system used in multiple politically independent or geographically diverse regions may diverge over time into several systems” (no. 14, p. 412). One might have guessed as much, and while Chrisomalis’ empirically demonstrates what was otherwise merely probable, he does little to advance the discussion beyond this plausible point.

One of the book’s most intriguing sections comes at the very end (p. 421ff.), where Chrisomalis engages in a quantitative macrohistory of notation systems. Beginning with only a few in the 4th millennium BCE, the number of numerical notation systems being used simultaneously peaked around 1500 CE, when there were thirty-two different ones in use worldwide. This was followed by a collapse in the number of systems leading to our own time, in which western numerals are overwhelmingly dominant worldwide. Chrisomalis ties each stage in the global rise and decline of the number of active systems to the broad outlines of world history, culminating with the emergence of global capitalism in the sixteenth century. One could no doubt argue with the author’s specific historical interpretations. But more significantly, he adds a new and previously hidden numerical dimension to traditional accounts of world history.

*Numerical Notation* is a masterly work—comprehensive, authoritative, and methodologically rigorous. It will be a cornerstone in the study of number systems for years to come.

———Amir Alexander, UCLA

Anupama Rao, *The Caste Question: Dalits and the Politics of Modern India*. Berkeley: University of California Press, 2009

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Several years ago, during a wave of resistance to caste-based reservations in higher education in India, it was common to hear detractors accuse reservations, and the reformers who advocated them, of *reviving* caste in a modern society where it had no place. Though similar to reactions to affirmative action measures in other parts of the world, this assertion voiced unique anxieties about not only the challenges minority groups might pose to an imagined meritocracy, but also what Anupama Rao refers to in this book as “the archaic.”

In this instance, “the archaic” was not only the fact of caste but also the stain it might bring to modernity, a threat also posed by the bodies of low-caste people. Rao’s brilliant account of Indian democracy from the perspective of caste offers ample material for rebutting the idea that caste-politics reintroduce long-dead features of Indian life, and exposes the bodily politics of such claims.