Introduction
Measurement as Metalanguage

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It seems to be the case that literary scholars, by default, shun the question of measurement in favor of the unmeasurable and the incommensurable. While this might have been done out of a healthy disciplinary bias, the conceptual purchase of measurement, to be sure, has come to the fore across academic fields in recent years.

Chief among the reasons is the Anthropocene discourse, now assuming a quasi-authority to the effect that "geo-logy," in Bruno Latour's words, has apparently become "the new umbrella for all the sciences."[1] Indeed, while the geologists proactive in the Anthropocene discursive community acknowledge politely that alternative takes on the Anthropocene are being produced in diverse fields including social sciences and the humanities and that communication among these fields is essential, they would still like to see a formalization of the term strictly aligned with the geological definition—that is, a demarcation as a unit of the Geological Time Scale, a periodization determined in stratigraphic terms (Zalasiewicz et al., "The Anthropocene").

Even when these geologists are measuring our man-made world, or "the technosphere" (defined as "our complex social structures together with the physical infrastructure and technological artefacts supporting energy, information

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[1] Latour is not proposing to eliminate geology altogether, the predominant discipline in the Anthropocene discourse. He is proposing instead that geology and other Earth system sciences turn into "earthly sciences," or what he calls Gaialogy, a positioning that furnishes "local points of entry into the vast question of Gaia" and which reflects the awareness that we are in effect living "*in* Earth" rather than on Earth (Latour).

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and material flows that enable the system to work, including entities as diverse as power stations, transmission lines, roads and buildings, farms, plastics, tools, airplanes, ballpoint pens and transistors" [Zalasiewicz et al., "Scale" 10-11]),[2] and even though they concede that their estimation is but preliminary due to their "ignorance of the number of artefact types that have been made" (19), they stick to the geological approach to human life, examining only what is "fossilize-able" (19) and focusing on the stratigraphic effects rather than possible causes of the Anthropocene (Zalasiewicz et al., "The Anthropocene").

Another powerful player contributing to the gaining currency of measurement is the renewed interest in cybernetics. Philosophers like Yuk Hui are making compelling arguments about how the digital age must attend to the fact that we are now dealing with machines that have life.[3] He contends that the collapse of the boundary between mechanism and vitalism has already been written in the script of Norbert Wiener's cybernetics and that Wiener's cybernetic organicism, if employed carefully, is a highly workable solution in response to current transhumanist technological systems.[4]

To begin to appreciate the urgency of issues surrounding measurement in critical thought today, the journal gathered together a group of scholars and graduate students for a reading project during the 2020-21 academic year. Our reading list was embarrassingly inadequate, but the goal was to grasp the relevance of, say, the history and philosophy of science to literary studies. Particularly noteworthy is how the classics of history of science on the topic of measurement are able to elucidate the self-referentiality of measurement, especially measurement in its modern forms. That is to say, modern theorizations of measurement seem to always end up pointing toward a metanarrative the various practices of measurement are embedded in. Scientists' countless endeavors to measure temperature, for instance, laid bare how the process was never a straightforward discovery of facts (since temperature could not be known empirically and had to be estimated via something else such as air or mercury), which in turn would bring to light how epistemic validity in scientific development was predicated on

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[2] By their measure, the technosphere we inhabit, as of 2016, stood at "a mass of ~30 trillion tonnes (Tt), equivalent to > 50 kg/m2 of the Earth's surface," which translates as "five orders of magnitude greater than the standing biomass of humans . . . presently sustained by this construct and its reshaping of the biosphere" (Zalasiewicz et al., "Scale" 19).

[3] The resurgence of interest in cybernetics, critiques of it included, is also attributable to recent debates on James L. Lovelock's Gaia hypothesis. See Bergthaller.

[4] See Hui, *Recursivity* 115-29; "Cybernetics"; and *Art* 211-31. Given his progressive thesis, however, it remains debatable if the examples Hui affirms are not already limiting the configurations of today's intelligent machines.

negotiations with earlier models (Chang).[5] The concerted attempts to standardize time in the mid- and late nineteenth century bespoke an eagerness to reinforce the tenets of modernization: efficiency and easiness of communication of all sorts (Galison). And behind France's century-long effort since the French Revolution to promulgate the metric system was a national (and even nation-building) program promoting justice in commerce, equality in social relations, and, above all, rationality (as the distinctive French quality that is at the same time universal) (Alder). As Ken Alder puts it concisely, his study of the French metrological enterprise aims "to examine both the rhetoric *about* the metric system and the metric system *as* a politicized language about the material world" (42).

If a meter was decided according to geodetic work in the 1790s "which measured a portion of the length of a quarter of the earth's meridian (the distance from pole to equator) and divided that distance by ten million" (Alder 39), the etymology of the word tells a juicier story. In Greek, the root of the word is *metron*, denoting "that by which anything is measured." At the same time, it also means "meter" as poetic measure—or, even more straightforwardly, "verse" ("Meter"). In other words, if this history may be taken at face value, then "meter" means the very essence of language per se, which in turn suggests that the very name of the metric system is constitutively self-referential.

Such self-referentiality is inscribed in cybernetics too, in particular on the topic of entropy. Contemporary thinkers such as Bernard Stiegler have taken an interest in entropy as well, as a response to the crisis of the Anthropocene. In his rendition, entropy is conceived of as social and epistemic disruption brought about by computational capitalism, and the solution, he argues, is to try to defer, if not reverse, such entropy (Stiegler, ch. 1, 2, 13). But Stiegler's extended interpretation of the thermodynamic term might prove erratic at times, wavering between *not* seeing negentropy as a simple negation of all the wrongs of data economy and calling for a general transformation of entropy into negentropy.

In fact, if Stiegler would like to be consistent with his signature pharmacological proposition, seeing the double-edgedness of, say, information technology, he might gain by going back to the self-referential character of entropy understood by cybernetics.[6] In Wiener's exposition, "the notion of the amount of information [in cybernetics] attaches itself very naturally to a classical notion in

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[5] My gratitude to Professor Jonathon Hricko, a scholar in history and philosophy of science at National Yang Ming Chiao Tung University, for offering our reading group much assistance in tackling Hasok Chang's illuminating book on the invention of temperature.
[6] Stiegler criticized the cybernetic conception of entropy as being limiting and erroneous (200-01).

statistical mechanics: that of *entropy*" (*Cybernetics* 11); entropy is "a measure of disorganization" whereas "the information carried by a set of messages is a measure of organization, and "the more probable the message, the less information it gives" (*Human Use* 21). Or, as the computer scientist Ken Steiglitz sums it succinctly, if anything, entropy is first and foremost "self-information" of the system (94).

Thus, it seems that to posit measurement as the core of a discursive field is to posit a metanarrative; we just need to identify what the metanarrative is about. On this note, if anything is urgent today, it is the need to evaluate the Anthropocene discourse in light of this *meta-* aspect.

This feature topic is a small step some of the literature people here take to comprehend the ramifications of measurement. In the research articles section, Li-hsin Hsu's essay looks at how Thomas De Quincey, at the forefront of the Mechanical Age, tried to negotiate between scientific objectivity and the Romantic pursuit for spiritual transcendence; Julian Chih-Wei Yang examines the quantitative elements in Wu Ming-Yi's nature writing, ranging from *one* to *x*, as well as the hyperobjects and fractals in between or beyond; and Chingshun J. Sheu reads the widely popular *Ender's Game* series through the double lens of leadership studies and narrative analysis. In the Perspectives section, Ya-feng Wu, Shu-chuan Yan, and Chun-yen Chen each present their reflections on the reading assignments of the Measurement Reading Group, specifically the relevance of these readings to literary studies.

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