

I am honored to be invited to participate in this symposium, to discuss together with you “The future of the humanities” and their role in a healthy society. It seems incumbent on those of us in this opening session of our meeting to situate “the humanities” in some ways—what do we mean by the term, how are “the humanities” distinct from other fields of knowledge? And, of course, why should we value them?

As a classicist (and a Latinist, to boot), I was amused to find an Oxford English Dictionary reference from Edinburgh in 1869, explaining that, “Latin, not altogether without reason called ‘Humanity’ in this University, is the greatest of all keys to the history, the thoughts, and the mind itself of civilized man.” Suffice it to say that is NOT exactly the sense of “the humanities” that we will intend today.

But let me offer a different characterization from the OED (which I’ve modified slightly) as more to our purpose: **The humanities are typically distinguished from the social sciences [and sciences] in having a significant historical element, in the use of interpretation of texts and artefacts rather than experimental and quantitative methods**

Obviously, this is a “definition” by distinction—i.e., focusing on how the humanities *differ* from other studies. In my time this morning, I will want to emphasize particularly this distinction between quantitative methods and modes of understanding that are more historical, text-based, and interpretive. I’m sure many of us, through the course of the day, will offer explications of what “the humanities” means; I want to focus us, first, on what humanities are NOT—and why making that distinction is especially important.

This semester, as I’m teaching a course in classical drama, it is perhaps inevitable that my thoughts are colored by Greek tragedy. Calling my concerns about the place of the humanities in higher education—and in our national life--“tragic” would probably be hyperbolic. But if these concerns are in fact part of a larger drama in our society—as I believe they are—then, the term may be more apt.

Let us cast the US as the protagonist in this classical drama. You know the plotline: the hero, powerful and arrogant, plows forward toward his own demise, heedless of the warning voices from the chorus. In this second decade of the 21<sup>st</sup> century, many ills plague our society; there is plenty for a chorus or a Cassandra to decry. The future of our environment looks grim, excessive partisanship cripples our national politics, the economy has taken a body blow, the infrastructure of our cities is wearing out--and these are only a handful of the many challenges we face.

Yet I believe another threat to our well being and our future, both pervasive and debilitating, goes unrecognized or even mistakenly welcomed. In this technological era, as we attempt to respond to the many challenges we face, we have come to rely on the explanatory power of quantification, I would argue, in a way that has far exceeded its useful bounds. And this over-confident dependence on quantification alone as a tool for mapping reality may now blind us to important truths. A world which truly believes “if it can’t be measured, it doesn’t count” —as we so often hear now, not only in the corporate workplace, but in the halls of academe—is a world that has no place for the lessons of history, the nuances of texts, the experience of artefacts. Of course, over-confidence is a pattern very familiar from Greek tragedy. After all, it is not weakness that brings the great Greek heroes down; it is strength—a strength unable or unwilling to recognize its own limits.

And our modern reliance on quantification has undoubtedly been a strength. As Moore’s Law remains reliable, our wildly accelerating capacity for computation has unquestionably enabled unprecedented scientific and medical advances in our world. Heroic strength, however, always carries its own fatal flaw. Computational strategies alone cannot address the complex human quandaries we confront and lead us to a brighter future. Indeed, I believe we have reached a point where continued reliance on “the numbers” alone may foreclose that future.

Reflect on the recent crises caused, e.g., by our technological capacities for: deep water drilling in the Gulf of Mexico, harnessing nuclear power in Japan, or developing massive agribusinesses which can ship (tainted) food products such as eggs, meat, and produce throughout the nation and even around the world. By these examples, I don’t intend particularly to join the current campaigns for a “green” world or for so-called “sustainability.” My point is more general and—I believe—more threatening to our future. To put it aphoristically: Our technological skills enable us to execute what we lack the wisdom to evaluate. To seek that wisdom, I believe, we must turn to the humanities.

The field of bioethics perhaps presents some of the clearest conundra that we face today: given what we *can* do, what *should* we do? This question cannot be answered by science alone; it is no accident that hospital boards increasingly include a resident ethical philosopher. We can fertilize octuplets—but should we? We can preserve human life in a vegetative state (such as Terry Schiavo), but should we? We can experiment with human disease strains (as was done at Tuscaloosa), but should we? These questions can never be answered by science;

they can only be addressed by the humanities. My former colleague, the philosopher Martha Nussbaum, has been both incisive and eloquent in illuminating the quality of “moral imagination “ that may enable one to enter into an understanding of the life of another. Such an understanding will never come from graphs, spreadsheets, or scatterplots. But it may be developed by novels, drama, poetry, history, and philosophy.

Writing this fall in the journal Genome Biology, the geneticist Gregory Petsko reflected on what matters most: “I started out as a classics major,” he wrote. “I’m now Professor of Biochemistry and Chemistry. Of all the courses I took in college and graduate school, the ones that have benefited me the most in my career as a scientist are the courses in classics, art history, sociology, and English literature...If I’ve been fortunate enough to come up with a few insightful observations, I can assure you they are entirely due to my background in the humanities and my love of the arts.”

And he continues, “Our ability to manipulate the human genome is going to pose some very difficult questions for humanity in the next few decades, including the question of just what it means to be human. That isn’t a question for science alone; it’s a question that must be answered with input from every sphere of human thought, including—especially including—the humanities and arts.”

Einstein’s well-known epigram is worth repeating: “Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted.” This is a basic truth, but in our rash embrace of: survey data, returns on investment, quantifiable “deliverables,” ubiquitous “accountability”—in short, in our single-minded reliance on “the numbers”—we stand in danger of forgetting Einstein’s formulation. By all means, let us rely on quantification where it is appropriate; the numbers do, indeed, tell a story. But there are many, many other stories to be told, which require other modes of telling. Oedipus rightly takes pride in having solved the riddle of the Sphinx; where he goes wrong is in believing he can therefore solve every riddle.

Urging skepticism about reliance on quantitative analysis and what it can accomplish may itself seem antiquated. After all, in our post-Enlightenment development of the sciences and technology, have we not—much like breaking the sound barrier—sped past those limits of understanding which may have held back earlier peoples? When we are able to split the atom, splice the genome, and seed the clouds, perhaps a reverence for what is beyond man’s reckoning seems merely

a relic of eras before we had achieved the full powers of our quantitative methods and models. Or perhaps not. Let me adduce here two examples of increasing skepticism about the power of numbers alone—from the fields of epidemiology and of environmental science.

Science journalist Gary Taubes has presented a compelling case against over-reliance on the science of epidemiology. The popular press, he notes, likes to disseminate prescriptions or proscriptions (eat more oat bran, avoid caffeine), based on research evidence that is often spotty, inconclusive, or downright deceptive because of its partiality. These proclamations—often, much to the public’s confusion, reversed within a short time—stretch the research efforts of epidemiology beyond what they can bear. “The perception of what epidemiological research can legitimately accomplish,” Taubes claims, “may have run far ahead of the reality.” The reason, it seems safe to say, is the public appetite for quantitative reassurance, particularly in those areas of our lives, such as health, where our anxiety and uncertainty most reside. The “data-fication” of contemporary life provides the *illusion* of control even when—perhaps especially when—it is least warranted. When the Greeks sought guidance, they went to the Delphic oracle; today we employ Oracle databases to the same end.

Professor Sander Greenland of UCLA, author of the textbook, Modern Epidemiology, warns that “The combination of data, statistical methodology and motivation seems a potent anesthetic for skepticism.” Quantification—even when it is flawed—provides the illusion of mastery; we might call that illusion hubris.

Not only in medicine, but in other fields as well, scientists are calling for a more thoughtful understanding of the limits to quantification’s usefulness. Orrin Pilkey and Linda Pilkey-Jarvis, co-authors of the book, Useless Arithmetic: Why Environmental Scientists Can’t Predict the Future make a particularly strong case that “quantitative mathematical models have created the delusion that we can calculate our way out of our environmental crises.” They argue, further, that “the common use of such models has, in fact, damaged society in a number of ways.” The very complexity of the earth’s processes, they point out, renders many strictly mathematical models [their word]: “absurd.”

Yet despite the repeated failures of mathematical modelling, they note, “no one ever admits that the models are flawed.” Why not? With the advent of powerful computers and increasingly intractable environmental issues, these scientists argue, reliance on quantitative data has proven to be a Siren’s song. “Our society as a whole,” they claim, “remains overconfident about quantitative modeling.

Accustomed to firm predictions—even if they turn out to be wrong—people find qualitative models insufficient....We have come to the point where mathematical models that *cannot* accurately predict the outcomes of natural processes are widely used and accepted without question by our society.”

This should give us considerable pause. The public is more reassured by quantitative data *even if they are actually wrong* than by other, potentially more meaningful, kinds of information. Pilkey and Pilkey-Jarvis make a compelling case within their own field of environmental studies, concluding that “there are no precise answers to many of the important questions we must ask about the future of human interaction with our planet. We must use more qualitative ways to answer them.” The humanities don’t purport to offer “precise answers;” what they do offer are alternative pathways to understanding.

As these examples from epidemiology and environmental science indicate, we need to recognize (or to recall) that quantitative methods alone are insufficient to address many of our most complex human issues. These issues require us to develop a wider breadth of understandings, to employ the materials and the methods of the humanities and liberal arts. As a scholar of Greek tragedy I hear, from those I’ve cited here and others, the voices of the chorus—warning, urging another point of view, but not being heeded. Of course, the chorus is never heeded; the protagonist continues to believe that he has a special purchase on wisdom, even at the moment when he is least wise.

Let me be clear: I am certainly not urging that we abandon science, mathematics, or data. Indeed, the sciences are a part of the liberal arts. And many outstanding scientists pursue their work and perceive their work very much within a broader, humanistic context. So I think it is less the bench scientist in the laboratory than the proverbial “man on the street” who is more likely to be over-confident about the power of quantification.

It does not take much imagination to recognize that there are many, many forms of understanding and learning which do not admit of simple measurement—indeed, do not admit of measurement at all. We might include: discerning historical causes, inventing a new process, ascertaining one’s ethical duty, analyzing political conflict, creating a work of art—all of these are valued activities in the humanities. But what modes of measurement could we possibly bring to bear, to quantify that value? Everything that counts cannot necessarily be counted. Some stories cannot be told by numbers alone. They must be grasped by narrative, by observation, by

reflection; they unfold over time. They are processes rather than products, directions or discussions rather than data.

Indeed, we need only reflect on those qualities and relationships which lie at the very heart of our human-ness to recognize that quantitative reckoning is utterly unsuited for understanding, analyzing, or evaluating our most significant human commitments. When the poet professes, “How do I love thee? Let me count the ways...” she doesn’t have in mind “A Lover’s Report Card.” When the hymnist proclaims, “Nearer my God to Thee,” she neither needs nor wants to add: “by 10%.” When activists chant, “We shall overcome,” they don’t typically mean, “in the next fiscal quarter.” My colleague William Durden, president of Dickinson College wonderfully illustrated the inappropriateness of such standards to our spiritual lives in his sardonically titled essay, “No God Left Behind.”

We find ourselves today in a society which seems to have lost sight of Einstein’s wisdom and succumbed to the fallacious belief that everything can be measured—moreover, that the measures that matter most are those of the market economy. This is the tragedy in higher education to which I alluded at the beginning of these remarks. Today, from the press, the policy makers, the pundits, and the public, we hear NO discussion of education as anything other than “the preparation of workers” for “global economic competitiveness.” But a healthy democracy requires more than that. As the late Tony Judt wrote, “modern democracies...need to be bound by something more than the pursuit of private economic advantage,” and he aptly cited John Stuart Mill: “the idea of a society held together by pecuniary interests alone is... ‘essentially repulsive.’”

It may not be fashionable to say that there is learning which cannot be measured in “value-added” increments and that there are goods which transcend the marketplace. But, frankly, it must be said. And those of us in higher education, those of us who are humanists, must have the courage to say it. In our infatuation with the methodologies of the sciences, we must not neglect the human sciences, the humanities. We might even take our cue from the Greek philosopher, Protagoras, who first proclaimed that “man is the measure of all things.” Of course, in Greek tragedy, the chorus is never heeded. But the protagonist never survives.