The Annual Proceedings of

The Wealth and Well-Being of Nations

2016-2017

Volume IX: Bourgeois Virtues and the Great Enrichment: The Ideas and Influence of Deirdre Nansen McCloskey

Warren Bruce Palmer, Editor

The Miller Upton Program at Beloit College

The Wealth and Well-Being of Nations was established to honor Miller Upton, Beloit College's sixth president. This annual forum provides our students and the wider community the opportunity to engage with some of the leading intellectual figures of our time. The forum is complemented by a suite of programs that enhance student and faculty engagement in the ideas and institutions that lay at the foundation of free and prosperous societies.

Senior Seminar on The Wealth and Well-Being of Nations:

Each year, seniors in the department of economics participate in a semester-long course that is built around the ideas and influence of that year's Upton Scholar. By the time the Upton Scholar arrives in October, students will have read several of his or her books and research by other scholars that has been influenced by these writings. This advanced preparation provides students the rare opportunity to engage with a leading intellectual figure on a substantive and scholarly level.

Endowed Student Internship Awards:

A portion of the Miller Upton Memorial Endowments supports exceptional students pursuing high-impact internship experiences. Students are encouraged to pursue internships with for-profit firms and non-profit research organizations dedicated to advancing the wealth and well-being of nations.

Charles G. Koch Student Research Colloquium and Speaker Series:

With generous support from the Charles G. Koch Charitable Foundation, the department has initiated a research colloquium that gives students the opportunity to read and discuss seminal articles aimed at deepening their understanding of the market process. Students also develop original analysis that applies economic ideas to novel contexts. Colloquium participants receive close mentoring as they craft an article with the eventual goal of publication in a newspaper, magazine, or academic journal. The themes of the research colloquium and annual forum are supported with a speaker series featuring the next generation of scholars working on questions central to our understanding of the nature and causes of wealth and well-being.

Annual Proceedings of The Wealth and Well-Being of Nations:

The keynote address presented by the Upton Scholar is an important contribution to the public discourse on the nature and causes of wealth and well-being. Further, the annual forum includes presentations by noted scholars who expand upon or challenge the work of the Upton Scholar. These presentations are assembled in the *Annual Proceedings of the Wealth and Well-Being of Nations*, which serves as an important intellectual resource for students, alumni, and leaders within higher education.

The Annual Proceedings of the Wealth and Well-Being of Nations

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Volume IX

Warren Bruce Palmer
Editor

Jennifer Kodl
Managing Editor

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Contributors

Warren Bruce Palmer is the Elbert H. Neese, Jr. Professor of Economics, Beloit College.

Deirdre Nansen McCloskey was the 2016 Miller Upton Scholar and is Distinguished Professor of Economics, History, English, and Communication, University of Illinois at Chicago. As her web page notes, "She is known as a "conservative" economist, Chicago-School style (she taught in the Economics Department there from 1968 to 1980, and in History), but protests that "I'm a literary, quantitative, postmodern, free-market, progressive-Episcopalian, Midwestern woman from Boston who was once a man. Not 'conservative'! I'm a Christian libertarian."[1]

Joel Mokyr is Robert H. Strotz Professor of Arts and Sciences and Professor of Economics and History at Northwestern University and Sackler Professor at the Eitan Berglas School of Economics, Tel Aviv University.

Jan Osborn is Associate Professor of English and Smith Institute for Political Economy and Philosophy, Chapman University.

Bart J. Wilson is Professor of Economics and Law, Smith Institute for Political Economy and Philosophy, and Economic Science Institute, Chapman University.

Gus P. Gradinger is Investment Analyst, Prologis.

Stephen T. Ziliak is Professor of Economics and Faculty Member of the Social Justice Studies Program at Roosevelt University (Chicago) where as a faculty member he also served on the University Board of Trustees. He is also Conjoint Professor of Business and Law, University of Newcastle (Australia); Faculty Affiliate in the Graduate Program of Economics, Colorado State University and Faculty Member of the Angiogenesis Foundation (Cambridge).

Emily Chamlee-Wright is President of the Institute for Humane Studies. She was previously the Elbert H. Neese, Jr. Professor of Economics and associate dean at Beloit College.

Joshua C. Hall is Associate Professor of Economics, and Director of Center for Free Enterprise, West Virginia University. He was the Elbert H. Neese, Jr.

1 http://www.deirdremccloskey.com

Contributors

Professor of Economics, Beloit College, 2012-2013.

Seung (Ginny) Choi is Assistant Professor of Economics, St. Vincent College.

Virgil Henry Storr is a Senior Research Fellow and the Senior Director of Academic and Student Programs at the Mercatus Center, a Research Associate Professor of Economics in the Department of Economics, George Mason University and the Don C. Lavoie Senior Fellow in the F.A. Hayek Program in Philosophy, Politics and Economics, Mercatus Center, George Mason University.

Bob Elder is the Allen-Bradley Endowed Chair in Economics, and Chair of Department of Economics, Beloit College.

Laura E. Grube is Assistant Professor, Department of Economics, Beloit College.

Chuck Lewis is Professor of English and Director of the Writing Program, Beloit College.

Catherine M. Orr is Professor and Chair, Department of Critical Identity Studies, Beloit College.

Introduction

Warren Bruce Palmer[1]

It is customary in this introduction to write, "As the Elbert H. Neese, Jr. Professor of Economics, it was my pleasure to organize the Wealth and Well-Being of Nations: a Forum in Honor of Miller Upton, and now, in turn, to introduce the *Annual Proceedings of the Wealth and Well-Being of Nations*, a selection of papers presented at the Forum."

Yet, these words fail to express the special pleasure of organizing the ninth Miller Upton Forum, which was special for featuring the remarkable Deirdre N. McCloskey as the 2016 Miller Upton Scholar and for bringing back former Beloit College professors Emily Chamlee-Wright and Josh Hall, both of whom had previously led the Miller Upton Forum. Moreover, Emily, with emeritus professor Jeff Adams, was the original designer of the Miller Upton Programs, and she pioneered the Miller Upton Forum, leading it for four years and setting the standard that every year we strive to attain or exceed.

Held each fall, the Miller Upton Forum features one of the world's most influential thinkers on the ideas and institutions necessary for advancing the freedom, wealth, and well-being of the nations and peoples of the world. Each year's Miller Upton Scholar is joined on campus by a group of other thinkers and practitioners who engage us in a week of enlightening classroom discussions, forums, and one-on-one conversations, capped off by the Miller Upton Scholar's keynote address -- The June B. Martin'40 and Edgar W. Martin Memorial Lecture.

The Miller Upton Programs and the Miller Upton Forum are named in honor of Miller Upton, the sixth President of Beloit College, and are inspired by Miller's unflagging dedication to the ideals of a liberal society: political freedom, the rule of law, and peace and prosperity through the voluntary exchange of goods and ideas.

Miller Upton never met Deirdre Nansen McCloskey, the 2016 Miller Upton Scholar, but in her, he would have found a scholar equally committed to the

1 Warren Bruce Palmer is the Elbert H. Neese, Jr. Professor of Economics, Beloit College.

ideals of a liberal society. He would have found her exploration of the causes of the Great Enrichment – the extraordinary increase since 1800 in living standards, life expectancy, and quality of life – to make perfect sense: "Give masses of ordinary people equality before the law and equality of social dignity, and leave them alone, and it turns out that they become extraordinarily creative and energetic."[2]

Deirdre Nansen McCloskey, Ninth Miller Upton Scholar

Deirdre Nansen McCloskey was Distinguished Professor of Economics, History, English, and Communication at the University of Illinois at Chicago, 2000 – 2015. She previously was a tenured professor at the University of Iowa and at the University of Chicago. She completed her Ph.D. in Economic History at Harvard University with Alexander Gerschenkron; her dissertation[3] won the 1970 David A. Wells Prize and became the first of her seventeen published books.

In her most recent work – three volumes dubbed The Bourgeois Trilogy – McCloskey makes the case that the Great Enrichment based on trade-tested betterment has led humanity out of poverty while also nourishing "lives of virtue" (McCloskey, 2006:4). "The worldwide enrichment made possible a cultural and ethical enrichment, too." (McCloskey, 2006:11) What explains the Great Enrichment? asks McCloskey (2010), and she argues at length that "economics can't explain the modern world". Instead, in the third volume of the Trilogy, McCloskey (2016) answers the question posed in her earlier volume by exploring in more than 650 pages "how ideas, not capital or institutions enriched the world." The main idea that enriched the world, in her view, is the widespread adoption of liberalism in the classical sense of the word: "The modern world was not caused by "capitalism", which is ancient and ubiquitous.." but by "egalitarian liberalism" and through "equality of liberty and dignity". (McCloskey: 2016, xv)

Rather than settle for the abbreviated summary in the above paragraph of the Bourgeois Trilogy, read it in its entirety, all three volumes. If you don't have the months to devote to this endeavor or first wish to sample more of the many ideas of her Trilogy, a good, shorter place to start is with her essay in this volume based on her Martin Memorial Lecture at the 2016 Miller Upton Forum.

2 https://www.nytimes.com/2016/09/04/upshot/the-formula-for-a-richer-world-equality-liberty-justice.html?_r=0

3 Economic Maturity and Entrepreneurial Decline: British Iron and Steel, 1870-1913

In her paper, "How We Became Rich: From Liberal Ideas, Not Capital or Institutions or Exploitation," McCloskey writes, "I claim to have explained the initiating cause of modern economic growth, a cause that actually explains its great magnitude." How great is that magnitude, you ask or Deirdre certainly wants you to ask. In her talk, she illustrated the magnitude by pointing out the very existence and the technological features of the building in which she delivered her speech, Beloit College's Science Center, a marvel commonplace on college campuses. In her talk and paper, she illustrated the magnitude in multiple ways from noting that Sweden in 1800 was the second poorest nation in Europe with per capita income less than sub-Saharan nations today to observing that life expectancy worldwide in 1800 was 30 years while today it is "over 80 now in rich countries, and not much less in most poor countries." Even ignoring new products and processes, new inventions and quality improvements, the typical increase in per capita income from 1800 to the present is three thousand percent. Moreover, most of this increase happened after 1850, and for much of the world has only happened after 1950. What explains this unprecedented prosperity? Not economics.

Economics, Deirdre notes, is good at explaining small changes. After all, the bread and butter of neoclassical economics is marginal analysis. Explaining leaps and bounds, the enormous discontinuities and rapid advances of modern growth is a challenge McCloskey claims that current economics has yet to meet. Instead, she locates the source of modern economic growth in a change in ethics, in culture and in ideology, a change that granted ordinary people the freedom to pursue their ordinary goals and test their creative efforts in the market place. Trade-tested betterment favored innovations that liberty gave people the freedom to pursue. "New ideas from bourgeois commoners supported by a new liberty and dignity, that is, made the Great Enrichment, the most important secular event since we first domesticated wheat and horses."

Better than reading this summary, just dive right into Deirdre's talk that headlines this volume. Then continue on to the other essays in this volume that explore the ideas and influence of Deirdre McCloskey. Maybe all of these articles will whet your appetite for feasting on all three volumes of McCloskey's Trilogy.

The Ideas and Influence of Deirdre Nansen McCloskey

During the four days of the Upton Forum, we had three panel discussions, each with the title "The Ideas and Influence of Deirdre McCloskey" and even with ten speakers, we did not begin to do justice to all of her ideas and all of the ways in which she has influenced intellectual discourse. The three panel discussions were exciting, well-attended events, and each speaker has contributed an article to this year's Proceedings.

In his paper, "Culture, Elites and the Great Enrichment", **Joel Mokyr**, Robert H. Strotz Professor of Arts and Sciences and Professor of Economics and History at Northwestern University, states that he and Deirdre McCloskey agree that "words and ideas "caused" the modern world — perhaps with some good luck and good institutions thrown in." Both Mokyr and McCloskey agree "economic change depends, more than most economists think, on what people believe." The main difference between their views – a difference both consider minor -- is that Mokyr places more stress on changes in "the cultural beliefs of the intellectual elite", which he explores in this essay, while McCloskey places more stress on the bourgeois revolution that ennobled common people 'having a go'. Mokyr writes, "Unlike Professor McCloskey, I believe that … that natural philosophers, physicians, mathematicians, engineers, astronomers, instrument builders, and alchemists were the people who must be regarded as the main group that changed Europe's economic destiny." In his paper, Mokyr explores the development and importance of three meta-ideas: the triumph of experimentalism, the systemization and quantification of research, and the development of induction "when formal mathematical analysis would not do".

Bart Wilson, Professor of Economics and Law, Smith Institute for Political Economy and Philosophy, and Economic Science Institute, Chapman University, presented an engaging paper, "Commerce Unbound ", that he and his co-authors describe as "literary-critical economic nonfiction" in which they explore and celebrate what McCloskey terms one of the key bourgeois virtues: love. They explore the role of love in commerce – commerce in the narrow sense of the exchange of goods and services and in the broader sense as the exchange of social interactions – through the lens of Percy Shelley's *Prometheus Unbound*. The authors conclude that "With commerce… human beings live both good lives and lives of goodness." In their paper, the authors explicitly join McCloskey (2006, 2010, 2016) in her great project "to overturn the century-and-a-half

assumption that economics and ethics are two distinct disciplines and never the twain shall meet."

In his paper, "Statistically significant journey: How to grow the economy and keep your hair", **Stephen Ziliak**, Professor of Economics, Roosevelt University, reflected on his and McCloskey's progress in getting economists and statisticians to accept the critique in their co-authored book on the use, misuse and abuse of p-values: *The Cult of Statistical Significance*. Their work goes to the heart of knowing what matters. "The p-value approach to significance testing, combined with a bright line rule of statistical significance such as $p < 0.05$, is indefensible on purely logical grounds beyond the missing economic "oomph" (our word for "magnitudes of economic or other substantive importance")." Focusing on statistical significance obscures focusing on what truly matters. "Statistical significance is not the same as economic or ethical or social justice significance." Ziliak's paper celebrates that both the US Supreme Court and the American Statistical Association have accepted Ziliak and McCloskey's critique of statistical significance, and Ziliak hopes for widespread transformation of statistical analysis: "If we are going to stem and finally stop altogether the widespread misuse of statistical significance we must begin to get the incentives right and in more than improved publication style and journal editorial policy."

In her paper, "Story Craft and the Market Process", **Emily Chamlee-Wright**, President and CEO of the Institute for Humane Studies, builds on McCloskey's work on the rhetoric of economics and the importance of story-telling in economic analysis. Chamlee-Wright explores, "the possibility that narrative is fundamental to economic processes, not just in the case of the "bourgeois revaluation," but in all economic processes and outcomes." In her essay, she focuses on "story-telling talk" and its role in "in driving economic activity and outcomes." The stories we tell about economic activity and how we tell these stories derive from our narrative of market exchange and other economic interactions, and determine those economic outcomes as well. Chamlee-Wright asserts that "McCloskey's body of scholarly work challenges us to take talk seriously as a driving force in economic action and outcomes.." and that "by reclaiming the importance of narrative" we can deepen our "understanding of the characters we play in economic life, the choices we make, and the social and economic patterns that emerge as a consequence."

In his paper for this volume, "A "Model" Model: McCloskey and the Craft of Economics,"

Joshua C. Hall, Associate Professor of Economics, and Director of Center for Free Enterprise, West Virginia University, reflects on the particular influence of Deirdre McCloskey's ideas on him as both scholar and teacher. He finds Deirdre's idea influencing him throughout all aspects of his career: in his referee reports, in his teaching and in his scholarly work on economic education and economic freedom. As an example for his entire academic career, Hall says that McCloskey "is a model of how to write for the ages – by writing deeply and extensively on what you think important, even if it is not always fashionable or what will get you in the top journals." Hall uses his work as the co-author of the *Economic Freedom of the World* annual report (Gwartney, Lawson & Hall 2016) as an example of a scholarly pursuit that has not always been fashionable. His work on this annual index of economic freedom is very much in the spirit of McCloskey's work highlighting the role economic freedom plays in the Great Enrichment.

The title of their article, "Markets as moral training grounds," succinctly states the main claim that **Seung (Ginny) Choi** and **Virgil Henry Storr** make in their article. They agree with McCloskey's claim that the Great Enrichment delivered both a material and moral enrichment in a virtuous, self-reinforcing cycle: "in order for nations to grow rich, entrepreneurs must be given the freedom to innovate and ordinary citizens to live dignified lives in the moral world of markets." They claim that McCloskey "is relatively silent on how the market teaches us the bourgeois virtues," and to remedy this omission, they explore two main mechanisms by which "… market interactions … make us more virtuous ..." First, markets reward ethical market participants and punish participants "who behave viciously." Second, repeated market transactions reveal and reward market participants' degree of virtue and thus "train individuals to become authentically virtuous in the long run." Choi and Storr agree with McCloskey that "ideas were the catalyst to the Great Enrichment" and one of the most important ideas was the dignifying of work and innovation, creating a virtuous cycle of ever-growing material and moral well-being.

In "Heeding McCloskey and Ziliak While Defending the F (as well as the D– and the F+)," **Bob Elder** discusses one of the recommendations in Zilak and McCloskey (2014), their call for the use of loss functions in statistical analysis. In his paper, Prof. Elder, the Allen-Bradley Endowed Chair in Economics, and Chair of the Department of Economics, Beloit College, accepts Zilak's and McCloskey's recommendation on loss functions and defends "*incremental* F-tests (not *global* F-tests).." His paper carefully explains how incremental F-statistics can easily be

interpreted as "loss functions for comparing losses." According to Elder, correctly employing incremental F-tests in model selection "can reveal what McCloskey and Ziliak call 'oomph' as we evaluate the implications for policy or other ensuing action." Elder concludes his paper and illustrates the value of loss functions with two examples: one derived from the 1962 Cuban missile crisis and the other from the challenges professors face in evaluating low performing students (arguing for the option of assigning grades of "D–") and "F+").

In her paper, "Towards a Culturally-aware Economics," **Laura E. Grube**, Assistant Professor of Economics, Beloit College, takes on the character short-comings of that idealized economic actor, Max U., a favorite of Samuelsonian economics critiqued by Deirdre McCloskey for its single-minded devotion to the virtue of prudence to the exclusion of all the other virtues necessary for and resulting from a well-functioning market economy (McCloskey 2006). Max U. as a personification of economic decision-making is "devoid of culture" and thus lacks the key context for understanding economic activity. As Grube asserts, "human beings are always operating within a context, and rely on past experience, knowledge, and beliefs in order to interpret the world and make decisions." In her paper, Grube summarizes McCloskey's critique of Max U and then illustrates "what a culturally aware economics looks like" particularly as developed in Austrian economics by Don Lavoie. Grube concludes that "Max U. does not provide a way to understand and explain human decision-making because he operates within a model that omits both ethics and culture."

Chuck Lewis, Professor of English and Director of Writing Center at Beloit College, has long been a student of Deirdre McCloskey, wryly claiming, "at least some of my work is her fault." Lewis notes that he was that rare graduate student who split his time between his home department, English, and the Department of Economics. Double dipping in these two disciplines led him to explore their connections in his dissertation, focusing on what he calls "a 'coincidence of wants' between neoclassical economics and the novel." With such interests, Lewis's intellectual inquiry had to be influenced by McCloskey's work in the rhetoric of economics. In his paper for this volume, "Literary Paint and McCloskey: Reading The Rise of Silas Lapham as an Economic Formation," Lewis explores the intersection between economics and the novel. McCloskey (2004, 2010, 2016) thoroughly explicates the rise of the modern bourgeois world and the virtues it engenders. In his essay Lewis uses Silas Lapham to illustrate the "tangled connections between the economic and literary imagination." Economic analysis is

not the main point of this novel, yet it nevertheless portrays macroeconomic and microeconomic issues, and the protagonist of the novel lives his life immersed in the developing economic world of nineteenth century bourgeois America. It is the interaction between the protagonist's inner world, outer world and the larger economic world that Lewis parses, drawing on McCloskey's economic/literary influence.

In her paper, "Marking Bodies in Academic Spaces," **Catherine M. Orr**, Professor and Chair of Critical Identity Studies at Beloit College, discusses how the ideas of Deirdre McCloskey apply to the very tasks central to Critical Identity Studies: Orr rejects that her discipline should set "declaring inclusion itself to be the unquestioned goal." Instead, she says we should ask how exclusions occur (purposefully as well as inadvertently despite the best of intentions) and explore "how the very idea of inclusion might be something to be challenged and even resisted." Orr notes that her "expertise ... is typically called upon in moments when bodies are marked in specific sorts of ways that, according to curiosity or custom, seem to require commentary ..." She implicitly and explicitly rejects commenting on the too obvious transition McCloskey made from Donald to Deirdre, a transition that McCloskey herself hopes may be increasingly less notable in time, preferring instead to advance a more general libertarian agenda (McCloskey 1999). Orr writes, "I don't want to mark—or to remark upon—specific bodies as much as I want to contemplate, with the help of Deirdre McCloskey's scholarship, a more general observation about both the impulse to mark bodies in academic spaces and the consequences that follow." In fact, Orr's paper is an extended exploration of how practitioners of any discipline need to be very conscious of how they use the rhetoric of their discipline: "As McCloskey warns us, we must not be seduced by our disciplinary magic but instead see ourselves as poets who understand limits and that our words are not the things themselves."

Acknowledgements and Thanks

On behalf of the Department of Economics let me once again acknowledge and thank Jennifer Kodl, Program Coordinator of the Upton Programs and Managing Editor of this volume. The faculty member charged with designing the Upton Forum, recruiting speakers and teaching the Economics Senior Seminar corresponding to each Upton Forum and Scholar is the Elbert H. Neese, Jr. Professor of Economics. Neese Chairs have come and gone over the nine years that the Upton Forum has existed. It is Jennifer Kodl who has provided the continuity for the Forum: she has been the logistical master-mind for every one, while charming and pampering every speaker over these nine years. The reputation of the Upton Forum derives in great part from her loving care of the program and of its speakers. Speaking for myself and I am sure for all of my predecessors – Emily Chamlee-Wright, Josh Hall, and Arielle John – thank you Jennifer.

The Miller Upton Forum also could not achieve its current level of success without the stellar leadership of Bob Elder, Chair of the Department of Economics, and without the active support of each member of the Department of Economics: Shatanjaya Dasgupta, Laura Grube, Jermaine Moulton, Diep Phan, and Darlington Sabasi. Brian Morello, Director of Center for Entrepreneurship in Liberal Education at Beloit (CELEB), also played a key role during Upton Week.

Let me also thank the members of this year's Economics Senior Seminar who eagerly embraced the opportunity to study the works of Deirdre McCloskey. Once again, our students rose to the challenge of studying path-breaking work on what promotes the wealth of nations – what Deirdre dubs "the Great Enrichment" -- and once again, our students made the faculty of the Department of Economics proud to have been their professors.

Finally, continued thanks are due to the many alumni, friends, and charitable foundations who have supported the Miller Upton Programs. Their initial support launched the Upton Programs, and their continued support enables the Department of Economics to invite to campus the world's top scholars and practitioners who are committed to understanding and promoting the sources of the wealth and well-being of nations.

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How We Became Rich: From Liberal Ideas, Not Capital or Institutions or Exploitation

Deirdre Nansen McCloskey[1]

I'm trying to explain modern economic growth. It's what most of the economists in this impressive hall in this impressive building at Beloit College have tried to do throughout their careers. Certainly I have tried and tried, since I first ventured in 1961 as a college sophomore into economics. Like my colleagues, in trying to explain modern economic growth I've run into many dead ends: the exploitation of the poor I believed as a Joan-Baez Marxist while in high school, the accumulation of capital in foreign aid or in this very building I was taught as a student in the 1960s, the gains from efficiency in property rights such as enclosure of English open fields I studied as a young academic. Much later I actually read the great initiating book trying to explain economic growth, written in 1776 well before the growth showed its bizarrely great magnitude, the blessed Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*. His explanation was the division of labor limited by the extent of the market, another dead end. After all, the division of labor had characterized human activities since the Egyptians and the Chinese, and markets flourished in almost every human society, without greatly enriching them, not anywhere close to as much as modern economic growth.

Tonight I want to make the surprising claim that I have found the way out. I

1 Deirdre Nansen McCloskey was the 2016 Miller Upton Scholar and is Distinguished Professor of Economics, History, English, and Communication, University of Illinois at Chicago. As her web page notes, "She is known as a "conservative" economist, Chicago-School style (she taught in the Economics Department there from 1968 to 1980, and in History), but protests that "I'm a literary, quantitative, postmodern, free-market, progressive- Episcopalian, Midwestern woman from Boston who was once a man. Not 'conservative'! I'm a Christian libertarian."

claim to have explained the initiating cause of modern economic growth, a cause that actually explains its great magnitude.

In short, the cause was liberty, and a new rhetoric that admired liberty. All around the North Sea from the 1500s on people gradually became more free, and therefore more ingenious, and therefore at length vastly richer. Nowadays the whole world is doing the liberty journey, though with stops and starts and side trips into the various dead ends.

It will, I know, seem implausible that a mere economic historian has found the way out, considering all the dead ends explored since 1776 by economists and historians more clever and more learned than I. You judge. Maybe I have succeeded, maybe not. But judge at the end by a sensible standard: does the alleged way out explain why we in 2017 are so much richer than Americans in 1776? And has the case been made that the other explanations, including Smith's own, are wrong? Have I started to persuade you, in other words, that the explanation from liberty has, so to speak, oomph, and that the others do not?[2]

The Latin word *explicandum*, meaning "the thing to be explained," was a favorite of my mentor, the great economic historian Alexander Gerschenkron (1904-1978). He understood sensible scientific procedure. When you approach an historical or economic problem, as also a problem in physics or politics, it is only sensible to get straight what really needs to be explained. Otherwise you will get lost in irrelevancies and dead ends.

The *explicandum* that we economists all know, and obsess about, in fact surrounds us tonight. For example, all of us here gathered—the descendants of uniformly idea-ignorant and work-wearied European and Asian and African and Latin American peasants—have now the leisure and the inclination to deliberate on the artifacts of a rich post-industrial society, in the building itself, in the steel of the chairs, in the books abundant, in the glass of the windows, and above all in our own educations at Beloit and beyond, which so exceed those of the honored ancestors that we can and will engage in an academic deliberation. A miracle.

The *explicandum* is miraculous, utterly historically unprecedented. Of what magnitude? How did it happen? Why?

Life expectancy has gone from about 30 years at birth worldwide in the year 1800 to over 80 now in rich countries, and not much less in most poor countries.

2 The full case is made in the trilogy The Bourgeois Era (McCloskey 2006, 2010, 2016), which contains the evidence for the assertions I make here. But that's 1,700 pages.

The ability to read in 1800 worldwide was about 5 percent. Now it approaches 90 percent. Up to 1800, and still for a long time afterwards, the average person in a cold country struggled to keep warm in winter. I remember my father in the 1940s shoveling coal in the basement of our apartment building every morning and evening. In earlier times even the castles of the rich were not cozy. An exhibition a few years ago on the theme of winter in an art museum in Zurich, Switzerland showed in many of the paintings a peasant off to one side struggling through the snow with sticks for kindling on his back. A winter scene. Or consider summer. At least inside the walls, the hot countries can be cool in a way that would have seemed miraculous as late as 1950. When I was a child the only air conditioning was in movie theatres, which proudly advertised the fact. In all seasons worldwide the food supply has been revolutionized since 1800, and especially since 1960. Until the so-called Green Revolution of dwarf varieties of crops, India was a net importer of grain such as rice. Then yields of rice there went from the 2 tons per hectare they had been in 1960, when the place still saw widespread starvation, to 6 tons. And the price was cut in half. India is now a major exporter of grain.

The many Swedish descendants here tonight should know that in 1800 Sweden was the second poorest country in Europe, second in poverty only to Russia. The average Swede made, earned, and consumed about $3 a day, expressed in the prices of 2017—think of living in Beloit or Chicago on $3 a day. Now the average Swede makes $110 a day—expressed in the same cash prices, understand, corrected for the value of money—and her American cousins in Wisconsin make more. Further, the Swedes in Sweden and their Wisconsin cousins can go to universities like Beloit or Gothenburg and become learned students of economic growth, because their incomes have risen by a factor of 110/3, or a factor of fully 37.

So, that's the *explicandum*. Once upon a time the world got along on about $3 a day per person, and got along very poorly indeed. Smallpox. Ignorance. Empty stomachs. Short stature. Now the world average of real income per day expressed in present-day prices, including even sad cases such as Chad in Africa, is $33, about Brazil's level. In Italy and Sweden and the United States it is $80 or $110 or $130, a gigantic increase, coming in the past two centuries. Thank God.

Take the typical increase per person we are trying to explain from 1800 to the present as a factor of 30, from $3 a day to the $90 a day typical of the moderately rich countries, more or less (the figures are rough)—or about 3,000 percent. I repeat: the percentage increase is not merely one hundred percent or even three

hundred percent, but three *thousand* percent over the base in 1800. If you allow for the improvement in the quality of goods and services it is higher. The evidence, I said, is all around. Americans now have bright houses—brighter than Europeans view as reasonable—but anyway very much better in lighting than candles or a fireplace in 1800. Ten thousand percent better is the estimate of the economist William Nordhaus. I have artificial hip joints, left and right. Thirty years ago the operation was experimental, and often failed. Now hip-joint replacement is routine, and my surgeon does ten of them a week—an enormous rise in the quality of medical care for that particular sort of arthritis, which in the old days led to sitting in a chair in pain, and dying early. (I give the advice, at no extra charge: if you are going to get arthritis, arrange to get it in your hips.)

Window glass tells the story. Notice the steady improvement in quality as you spot buildings from various eras, especially in the size of the individual panes. Medieval windows, if they had glass at all, got it by blowing a little round bottle out of molten glass and cutting off the bottom to use as the window glass, which when set in frames admitted light but was not much use for looking out. Early nineteenth-century houses, if their windows have not been replaced since then, have little panes of glass, six by eight inches perhaps, an improvement over bottle glass, though giving a somewhat wavy view, set in wooden frames, nine to a small window. By 1900 the ordinary houses had larger, single panes, usually split by a sash for opening the window. The "Chicago window" in pioneering skyscrapers had one five-by-three-foot pane of glass in the middle flanked by two narrower windows with smaller panes double hung on either side. The American department-store king Harry Gordon Selfridge created in 1909 a sensation in London by putting into his new Oxford-Street store 12-foot wide windows at street level, a single sheet all across, behind which he exhibited his wares. By 1950 suburban house would have one much-admired "picture window." Nowadays whole 100-story buildings are sheathed in massive sheets of glass, with chemicals or coatings reflecting or absorbing sunlight as the season dictates. It is massively improved quality, on the way to an enrichment well above three thousand percent.

The *explicandum* of an astonishing enrichment for ordinary people happened *after* 1800, we economic historians have found, and really only got going after 1850, starting in the pioneering places like Britain and the United States and Belgium. You've heard of the Industrial Revolution, classically dated from 1750 to 1850. In its homeland, Britain, it resulted down to 1850 in a doubling of income in a century. That's 100 percent, class—very welcome of course but not

the main item when we want to explain fully 3,000 percent: *six* instead of only one: 2, 4, 8, 16, 32.

There had been occasional 100 percent increases, that is, doublings, before, such as during the development of the Mediterranean oil-and-wheat economy after 700 BCE or during the Song Dynasty in China after 960 CE. Good—though they sunk back always into the permanent Malthusian poverty of humans of $3 a day. What was extraordinary from 1850 to the present in northwestern Europe and then much of the rest of the world was the "Great Enrichment." For one last time the growth kept going, after the Revolution, and did *not* revert to the miserable earnings that had been the life of our ancestors since the caves of Africa.

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The size of the Great Enrichment raises a correspondingly great scientific problem for economists. The tools of economics can explain *small* changes, small improvements in efficiency, using the "price theory," or "microeconomics," that we economists teach with such grim enthusiasm to juniors in college. Price theory can perhaps explain, over the ten years or so that economists think of as the medium run, the sort of improvement that comes from stopping doing stupid things—such as protecting us with high tariffs from foreigners who in dastardly fashion offer us TVs or lumber at low prices. And the other, "macro-" economics of unemployment and inflation and booms and busts can perhaps explain, over the same ten-year period, the ups and downs in prosperity typical of the business cycle, 5 or 10 percent. But micro- or macro-economics can't account for 3,000 percent increases in the welfare of the average person, the factor of 30, and especially for the poorest among us, in Britain and the USA, in Finland and South Korea.

An economist might reply in vexation, "Yes, I understand. The marginal reshufflings that micro- or macro-economics deal with don't work to explain such a gigantic *explicandum*. But you are forgetting, Professor McCloskey, the force of compound interest. Read the textbooks on growth theory! Piling up plate glass window on plate glass window, or Beloit BA on Beloit BA, does the trick, if we keep at it long enough. Let's see. . . . " She reaches for her calculator. "A factor of 30 increase of income per person from 1800 to 2017 would require only . . . hmm . . . a little over a mere 1.58 percent per year at annual compounding, a little less with continuous compounding, over a period of 217 years. What kind of economist are you, that you don't understand compound interest!"

I do understand compound interest, and am the kind of economist who has

read the textbooks on growth theory, and then a little bit more. The Rule of 72 says that something doubles with annual compounding in 72 years if growing at 1 percent per year (prove it by calculating it; it's more like a rule of 70 for continuous compounding). It doubles therefore in half the time if growing twice as fast, at 2 percent. And so forth. Therefore something growing at 1.58 percent per year doubles in 72/1.58 years, or 45.6 years. Since the year 1800 there have been 217/45.6 = 4.76 doublings on the base of $3, giving 6, 12, 24, 48, and then add that 0.76 of a doubling to $90, as I said. The 3,000 percent our of 1.58 percent is surprising if you as a non-economist don't think routinely in compound interest. But it's true.

But I am also the kind of economist who, with John Maynard Keynes, realizes that *sheer* accumulation, the mere piling up of plate glass and BAs *without a new and productive idea of how to employ them,* runs very quickly into the economist's favorite source of pessimism, diminishing returns. Imagine that the College decided to build an identical building to this one next door. Good to have two, maybe. But the second, viewed as an investment project, would of course not be as valuable as the first, unless a new idea had arisen of how to use it. Building it with the exactly the same use in mind would obviously not be as valuable as the first building. All right, build a third. And a fourth. Assume still no betterment in ideas, no innovation, mere piling building on building. Clearly, you see, piling is not the way to riches, even at a "mere" 1.58 percent over 217 years. It's the way to ruination, of the sort the economist William Easterly calls "capital fundamentalism," the notion that if you pour capital in foreign aid into Ghana the place will get rich. It didn't. You need new ideas, real innovation, actual improvements dreamed up by free and ingenious people, what I call "exchange-tested betterment."

I was in China for the first time just now for a few weeks. I invite my socialist friends to go there, and be stunned at how market-tested betterment, with really new ideas and without too much socialist interference, enriches a place. It is amazing, and will convert any open-minded socialist to praises of exchange-tested betterment. Until 1978 the government used rigorously the central planning and promised egalitarianism my socialist friends still admire, with the result that incomes in Shanghai stagnated at perhaps $2 a day. Now the real incomes there are upwards of $40 a day per person. A colleague at Fudan University told me that when he came there as a student in 1981 there were two tall buildings in Shanghai. Now there are 2,000.

Yet ideas—however necessary for real enrichment they are if they in fact are good, by being tested in exchange by how much people are willing to pay—can also be bad. Very, very bad. If a private entrepreneur invests in a bad idea, such as a computer app that no one wants, she goes bust, and the next loan the bank makes goes to someone who might have a better idea. The check of bankruptcy and banker reluctance is much less true of governmental investment, because it lacks the testing by voluntary exchange. The central government of China has invested in a gigantic system of high-speed railways perched on 60-foot viaducts nationwide. China has more high-speed rail than all the rest of the world, from Japan to Spain, combined. At 200 miles per hour you get from Hangzhou to Shanghai in 45 minutes rather than taking a drive on excellent but empty super highways in 2 hours 19 minutes. Glorious.

But does the system of rails, highly subsidized (having no unbiased test by exchange), raise Chinese real income? Is it mere accumulation, piling rail on rail for no gain, or even for a loss of real income considering what else could be done with the resources invested? Is it a bad idea, because premature for a country with an income still far below that of high-speed-absent United States or high-speed present Japan? Probably. In the United States a high-speed train on the dense route from Boston to Washington, DC might make sense. But one from Chicago to St. Louis—though it would seem like Progress because the technology dazzles— is an exceptionally bad idea, considering that airplanes do the job so much cheaper, and that there are alternative investments available with higher returns, such as fixing bridges. Mere investment, mere capital, mere rail and glass and bachelor's degrees, is not what enriches people. You can't expect to enrich the nation by taking money from people in taxes and throwing it at other people to implement unprofitable ideas. A crudely Keynesian theory would say that any investment "puts people to work," and therefore enriches the nation. It is mistaken. The 1.58 percent per year of the Great Enrichment came out of actually bettering ideas, not from the investment dependent on the ideas.

And I'm an historian, too. An historian will ask why the 1.58 percent did not begin millennia earlier, if it's merely a matter of piling brick on brick. People have long known how to pile brick on brick. If you answer the historian's query with an 1800-Specific-Cause X—suddenly urban economies of scale became large, suddenly markets (which as I said had in fact proliferated since the caves) started to encourage innovation—then Cause X is the *explicandum*, and you need to explain why it suddenly started its good work only in 1800. In the millennium

before 1750 the growth rate in, say, England was well below 0.1 percent per year. If sheer investment is supposed to explain the Great Enrichment, why didn't it happen centuries before? Low yield/seed ratios in medieval Europe meant that even then the savings rate had to be high, if you wanted any yield of grain at all next year. And why not in advanced China rather than in backward northwestern Europe? The Cause-X economists of recent growth theory seem not to have heard that Walt Whitman Rostow's suggestion sixty years ago of a take-off fueled by a bump up in the savings rate has been shown to be mistaken. And even some economic historians seem not to have heard that China in 1492 CE, or 1000 CE, or for that matter 0 CE, had technologies and institutions appropriate for sheer capital accumulation. The Great Wall is an instance, and the Grand Canal.

Capital accumulation in the absence of new ideas, in other words, can't be the driving force. Of course we need the physical capital. If the College has a good, new idea for a building to improve teaching and research, then—*having had the idea*—it is wise to make the investment. Getting the money is easy if the idea is truly good (President Bierman, also an economist, might disagree with the easiness!). Having the idea alone is of course not sufficient. You need subsequently the money and the bricks and the engineers. But the need doesn't make the subsequent steps *causal*. After all, you also need oxygen in the air. It would at least be unhelpful to declare that the building was *caused* by the oxygen, or by the presence of building craftspeople in the neighborhood, or by the absence of an active civil war in southern Wisconsin, or the existence of the planet, or the arrow of time.

The investment and its result in accumulated capital is intermediate, *after* the idea. The investment is not a first cause, a *primum mobile* as the medieval philosophers put it. It's a result of the new idea, and is made profitable by the new idea. (Or it is made unprofitable, if the idea is bad in terms of what people will pay—which, as you see, is why I use the locution "exchange-tested.")

Therefore, with a few other economic historians of the "ideational" school, such as Joel Mokyr and Jack Goldstone and Margaret Jacob, I have to set aside capital as the road to riches. The setting aside is disappointing, I admit, since we economists understand capital and its accumulation very well. Or at least we think we do. I have to conclude that there is something desperately mistaken with growth theory. We economists think we can measure the material capital at the center of growth theory ("Austrian" economists, however, such as Israel Kirzner, also honored some years ago as the Miller Upton Scholar, doubt it). But in fact

and in logic the material, physical capital is intermediate, not a *primum mobile*. To be sure, one can devise with growth theory some lovely equations, with stocks and flows, income and balance sheets, internal rates of return, cost/benefit analysis, and after a disturbance a steady state to be achieved in a century or so. But its materialism doesn't make a lot of sense.

We economists also think, alternatively, that we can measure "*human* capital," to which Beloit College, for example, makes contributions. But human capital likewise faces diminishing returns, unless offset by a bright new idea, such as the idea in 1810 at Berlin of the modern university. Some of my most ingenious colleagues in economic history have turned to such human capital as an explanation of our enrichment. But again: education is admittedly sometimes necessary, because you can't do chemical engineering without chemists. Yet the engineering is secondary to chemical *ideas*. And education is often conservative, as in the teaching of Latin to European priests and officials, or the Chinese examination system for entry to officialdom, vigorous from the Tang Dynasty down to 1911. You succeeded in Europe by knowing Cicero's orations and in China by knowing classical Chinese poetry—not by knowing how to balance a set of accounts or to compound some chlorine bleach.

I do not want to be understood as suggesting that education should in the narrow sense be useful for it to contribute to human welfare. The best training for a full life is a liberal education, even if you do learn also a little about accounts and chlorine on the side. But the belief in the routine of allegedly useful human capital in fact can lead *away* from new ideas. The Japanese Minister of Education a few years ago suggested that the state-financed universities in the country close down all departments except those in the so-called STEM fields of science, technology, engineering, and mathematics. Close economics, history, Japanese literature. He apparently didn't know that the non-STEM fields also teach people to think and to be wise, often better than teaching them to build assembly lines applicable next year. And he obviously didn't know that most of what the mathematicians study in the M of STEM, such as number theory, will in fact never be applicable to mundane affairs, and is in fact inspiringly humanistic in the way the study of Japanese literature is. And he also apparently doesn't know that we do not know in the present what *will* be applicable to mundane affairs in the future. (That last is another Austrian economic point.)

No form of capital, in short, is *initiative* of growth. It is necessary, if chosen wisely. But not sufficient.

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Consider another class of explanation, this time from the left of politics, originating from Karl Marx in particular and his followers. I have noted that I was once a Joan-Baez, folk-singing Marxian myself, so I know of what I speak, and honor it for its impulse to help the poor—even though now I think that the best way to help the poor is exchange-tested betterment yielding 3,000 percent. The leftwing theory, expressed in many a stirring song ("The people's flag is deepest red. . . ."), is that the way we got rich was by overcoming exploitation, and using the money exploited to, as Marx put it, "accumulate, accumulate! That is Moses and the prophet!" (He was making fun of the earlier economists, but his own theory followed theirs in its obsession with transferring capital to money and back to more capital.) The bosses have grabbed a pile of money, called "surplus value," and if we take it from them and give it to the workers, or invest it in government-owned steel mills, we get economic growth.

The grabbing part is what's behind the regulatory impulse, as in Senator Elizabeth Warren, or the French left. We can *endlessly* take back in the wage bargain what the bosses took from the workers in the first place. The notion refutes itself if one thinks quantitatively. Profits are about 15 percent of the nation's income. You can't enrich the non-boss part of the population by 3,000 percent by taking away from the bosses a mere 15 percent.

A similar leftish argument is the belief that the USA or Europe became rich precisely by exploiting other, non-USA or non-European people, through imperialism. Yet any economist who looks closely at the logic and the numbers concludes that imperialism was a poor business plan. Extracting gain from poor countries overseas was like a plan to make yourself rich by extracting gain from the homeless people in your city. For the ordinary Belgian or British person, it yielded no gain. In fact it yielded a loss, an expense. Britain maintained the largest navy in the world, half of which was devoted to "protecting the sea routes to India." No one except a few nabobs in the eighteenth century got a net gain from India, or the rest of the Empire. Ordinary British people were made no better off by painting a quarter of the land area and a quarter of the world's population British imperial red.

Another version from the left is that the working class in Britain itself was exploited. If you get your economic history from Charles Dickens of London, you'll think it plausible. But dear Charles knew next to nothing about industrialization (he went North to where it was happening exactly once, to write

Hard Times [1854]). The sort of poverty he portrayed was in fact traditional and Southern, having nothing to do with the dark, Satanic mills of the North (and in fact the routine quoting of William Blake's phrase of 1806 to evoke manufacturing and steam mills is probably mistaken literary history, too: he probably meant quite different and older mills, a metaphor of oppression by orthodoxy). The version is anyway strange on its face: let the bosses extract surplus value from the working class, then let them invest it, and after some decades the descendants of the *same working class* are enormously enriched. You can see that the explanation from exploitation circles back to capital and investment, which I have shown you is not causal.

I can perform at considerable length, and have (2006), the critical turn on all the usual explanations of our enrichment. People will say "coal," for example, to which I reply in Yiddish idiom, "coal schmole." The Chinese had coal, and had used it for three thousand years to fire porcelain. They even, around 0 CE, exploited natural gas. In the eighteenth century Holland could get coal by cheap transport across the North, yet the Dutch, though pioneers in commerce, did not industrialize until late in the nineteenth century. And so forth.

The economic historian Robert Allen, who also emphasizes coal, says "high wages encouraged labor-saving." To which I reply: wages were high in Holland, too, and coal cheap from Northumberland, yet as I just noted Holland did not industrialize early. And high wages encourage substitution, not innovation. And on and on. Allen and the rest are sadly mistaken.

The great, late Douglass North (1920-2015), still another Miller Upton Scholar, said "institutions." But, as I also have noted, institutions such as education are often, even usually, conservative. The institution of property rights is certainly conservative, as in the preservation of great estates in England through what was known as "entailment." North late in his extraordinary career went about implanting the idea of institutions as mightily causal in the minds of economists, such as Daron Acemoglu. "You know," said North, with Barry Weingast, "before 1688 there were wretched property rights in England." It is a fairy tale. Property rights were comprehensive and well enforced in England from the time of Edward I, reigned 1272-1307.

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All right, what's the real deal?

To begin with, technology is, clearly. Betterment from new ideas, including some new institutions (if not the ones North emphasized), are what made us rich.

It did not come, incidentally, from "scienceandtechnology," that slyly compounded word one hears all the time, used by advocates for big science to get big money. The word insinuates that Science made the modern world. When high-energy physicists want you to give them through your taxes more massive toys for the physicists to play with, they speak of scienceandtechnology. I want to retire the word.

True, big and high science gradually becomes more important as we drift from 1900 to 2017. Yet it was minor until about 1900, right through the first and second doublings, finally becoming a bit important towards 1910, say, in some chemical engineering and above all in electricity--which itself became truly central to the economy only around 1940, and arguably not until the proliferation of small electric motors after 1910 But even now most of the exchange-tested betterments comes merely from technological and institutional ideas, based on tinkering and cleverness, not for the most part from ideas from high science. Yes, computers. Yes, some material science. Not most exchange-tested ideas.

Containerization in shipping, for example, is a simple institutional idea, yet it produced the second wave of globalization (the first was by the steamship, down to 1914, which itself involved little in the way of Science except the weight of air). Containerization was invented in 1956 by Malcolm McLean (1914-2001). Fill twenty-foot containers at Chinese factories with TVs, then truck the containers to big ships holding 10,000 of them, and sail to Long Beach, California, offloading onto US trucks, and speed the containers to Kansas City, no human hand having broken the seal. Even at the outset in 1956, loading a ship by using longshoremen cost $5.86 a ton, as against 16 cents a ton with McLean's containers. It was a spectacularly enriching idea, an organizational idea—not deep science, and not much in the way even of new technology.

But where do the technological and organizational ideas, and even the scientific ideas, come from? Joel Mokyr has argued that they came from the top down, from clever scientists and engineers. The economist Richard Langlois and I believe that on the contrary most of the new ideas came mostly from the bottom up, depending directly on a social environment of free enterprise. Malcolm McLean was a poor boy from North Carolina, too poor to go to college. In 1935 he bought a truck for hauling empty tobacco barrels. Twenty years later he commenced revolutionizing world transport. Thomas Edison (1847-1931) did not go to school at all, peddling newspapers and candy as a child on the early railways, and as an entrepreneurial teenager, while (admittedly) devouring the textbooks

written by Mokyr's scholarly engineers. The cotton textile inventor in England, Richard Arkwright (1732-1792), was apprenticed as a barber, and did not read textbooks, yet ended as the richest non-aristocrat in Britain.

That is, the ideas for betterment came, and still come, largely from a *mass* of people allowed for the first time to "have a go," as the British say. In a hierarchical society, with traditional property rights and traditional education, the obstacles to innovation are appalling, as Mokyr among others has taught us. You couldn't have an idea for container ships—the law and the unions would have stopped them, as indeed they tried to do at the time, though not as successfully as the scribes prevented for twenty years the printing press from being introduced in the 1500s in Paris under the old dispensation.

After 1800 the technological and institutional and even scientific ideas went crazy. Matt Ridley speaks of "ideas having sex," when one technological idea combined with another, and another, and another. Cars on rails in coal mines had been used in northeast England for a long time to bring the coal out. And high pressure—that is, small—steam engines were known to be buildable around 1800. In the first decades of the nineteenth century combining the two ("having sex") gave birth to a locomotive hauling cars on wrought-iron rails on a new item called a "railway," the first public one being opened in England in 1825.

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But why did ideas there and then so suddenly start having sex? (Ridley thinks it was in Adam-Smithian style merely the market; but then why not in 2000 BCE?) Why did it all start at first in Holland about 1600 and then England about 1700 and then the north American colonies and England's impoverished neighbor, Scotland, and then Belgium and northern France and the Rhineland? That's the crucial *explicans* (the thing explaining) to be discovered for our *explicandum*.

The answer, in a word, is "liberty." A mass of liberated people, it turned out, are ingenious. Slaves, serfs, subordinated women, people frozen in a hierarchy of lords or bureaucrats are not. The "mass" is important: The core model should not be nuclear fission, the reaching of a threshold—at which, with the creative people bouncing against each other, the reaction becomes self-sustaining. It was more like a forest fire. The kindling for a creative conflagration lay about for millennia—the mass of ordinary people able to create new ideas--carefully prevented from burning by traditional societies and governing elites with watering cans. Then the historically unique rise of liberty and dignity for ordinary people disabled the watering cans and put the whole forest to the torch.

By certain accidents of European politics 1517 to 1789, having nothing to do with deep European virtue, more and more Europeans were liberated to burn with a gemlike flame. In the meantime, again by accident, the much more plausible candidates for an Industrial Revolution and a Great Enrichment further east, such as the Ottoman Empire or Tokugawa Japan or above all the learned and peaceful China, sagged into various versions of decline and elite-preserving routine. The Tokugawa outlawed *wheeled vehicles*, to protect employment in pack horses and pack humans. The Ming Dynasty *depopulated the sea coast* to fight piracy. Some European governments were as stupid as this, but they governed little duchies and a few big countries in competition with others, and there was always some crazy monarch willing to bankroll, say, Columbus.

The Protestant Reformation after 1517 in its radical form of Anabaptists and Congregationalists choosing their own ministers, or in the most radical form of Quakers not having ministers at all, gave people the idea that they could have control over their religious life, without lord bishops, and by analogy the idea that they might have control over their other, even economic, lives. The printing press and reading were crucial to the success of the Reformation and the other inspiriting accidents to follow. The eighty-year Dutch Revolt, 1568-1648, against the hegemon of the time, Spain, gave Europeans the idea that a commercial nation could govern itself without kings and nobles, as the less consequential Venetian and Swiss example had long suggested. The chaos into which England descended in the English Civil War of the 1640s (which historians on the left have renamed the English Revolution) gave birth to a startling political version of the Abrahamic equality of souls. The Glorious Revolution of 1688 established the transcendent power of Parliament over the monarch, and the American and French Revolutions established self-government, increasingly by ordinary people, even eventually women and former serfs and slaves, as the official European ideal. The inspiriting European accidents were, in short, the Four R's, preparing Europe for liberty: Reading and Reformation and Revolt and Revolution, More and more Europeans by the eighteenth century and especially the nineteenth had come to believe that common people should be liberated to have a go. Life, liberty, and the pursuit of happiness, you might say. To put the new ideology in its economic form, people gradually came to accept the two Bs, the Bourgeois Revaluation and the Bourgeois Deal: Let me have a go, and in one to two to six doublings by exchange-tested betterments I'll make *you* rich.

To use another and somewhat surprising word, what came, slowly, imper-

fectly, was equality. It was not an equality of outcome, which might be labeled "French" in honor of Jean-Jacques Rousseau and Thomas Piketty. It was so to speak "Scottish," in honor of David Hume and Adam Smith, equality before the law and equality of social dignity. It made people bold to pursue exchange-tested betterments on their own account. It was, as Smith put it, "allowing every man to pursue his own interest his own way, upon the liberal plan of equality, liberty and justice."

And that's the other surprising word explaining our riches: "liberalism," a word we can now take back from our friends on the American left (who prefer to be called progressives, apparently satisfied with its origin in eugenic schemes c. 1910), and restore the word to its original meaning, "worthy of a free person." Liberalism around 1700 was a new idea. The English Leveller Richard Rumbold, facing the hangman in 1685, declared, "I am sure there was no man born marked of God above another; for none comes into the world with a saddle on his back, neither any booted and spurred to ride him." Few in the crowd gathered to mock him would have agreed. A century later, many advanced thinkers like Tom Paine or Mary Wollstonecraft, did. By 1985 virtually everyone did. And so the Great Enrichment came.

The erroneous discoveries of the nineteenth century were nationalism and socialism (and if you like those, national socialism), and overarching them materialism, all to be applied in the twentieth century, with notably unhappy results. They bore fruit in Malthusianism, scientific racism, theorized imperialism, eugenics, tests of statistical significance, geographic determinism, slum clearance, Progressive regulation, and a cynicism about the force of ethical ideas. Much of the clerisy mislaid its earlier commitment to a free and dignified common people. It forgot the main, and the one scientifically proven, social discovery of the nineteenth century—which was itself also in accord with a Romanticism mischievous in other ways—that ordinary men and women do not need to be directed from above, and when honored and left alone become immensely creative. "I contain multitudes," sang the democratic, American poet. And he did.

The Enrichment proved scientifically that both the social Darwinism of the right and the economic Marxism of the left are mistaken. The genetically inferior races and classes and ethnicities proved not to be so. They proved to be creative. The exploited proletariat was not driven to misery. It was enriched.

New ideas from bourgeois commoners supported by a new liberty and dignity, that is, made the Great Enrichment, the most important secular event since we

first domesticated wheat and horses. The Enrichment has been and will continue to be more important historically than the rise and fall of empires or the class struggle in all hitherto existing societies. Empire did not enrich Britain. America's success did not depend on slavery. Power did not lead to plenty, and exploitation was not plenty's engine. French equality had nothing to do with it. The real engine was the expanding ideology of the liberal plan of equality, liberty and justice.

Economists and historians from left, right, and center can't explain the Great Enrichment. I claim that I can. And yet "my" idea is an embarrassingly unoriginal one. It is the idea and the promise of eighteenth-century liberalism, which alas we gradually forgot in the enthusiasm for the materialist notions of the nineteenth century , dominating social science and practical politics ever since. Yet the thin, bright stream of true liberals flows on, through Mill of England, Einaudi of Italy, Friedman of the United States. Let us rejoin it.

Until recently, to my shame, I had not read Ludwig von Mises' great liberal book of 1949, *Human Action.* (My roommate in college in the 1960s, an engineer, used to read it in breaks from solving second-order differential equations, and undoubtedly learned more economics than I learned in hundreds of hours of class time majoring in the field.) Imagine my chagrin, well after I had finished volume three of my trilogy detailing "my" idea about how ideas made for the Great Enrichment, when I read on p. 8 in the Introduction to Mises' book:

> The tremendous progress of technological methods of production and the resulting increase in wealth and welfare were feasible only through the pursuit of those liberal policies which were the practical application of the teachings of [classical, liberal] economics. It was the ideas of the political economists that removed the checks imposed by age-old laws, customs, and prejudices upon technological improvement. . . . None of the great modern inventions would have been put to use if the mentality of the pre-capitalist era had not been thoroughly demolished . . . . What we commonly call the "industrial revolution" was an offspring of the ideological revolution.
>
> Mises 1949 (1996, 2007), p. 8

I can't, seventy years on, put it better.

Perhaps the economic and historical sciences need revision, toward a "humanomics" that takes ideas seriously. Then they will understand how the Great Enrichment happened, and how it can be sustained. I invite you to share

in the overthrow of mere materialism, and the elevation of the uniquely human gift, free ideas and human action, so that we may in Tom Paine's words make the world anew.

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Culture, Elites and the Great Enrichment

Joel Mokyr[1, 2]

Deirdre McCloskey, in the massive trilogy she has produced in the past decade, asks deep and penetrating questions about modern economic growth, or what she calls "the Great Enrichment" (a term that is to be preferred to "the Great Divergence," which stresses the gap opening up between East and West in the eighteenth century rather than the miraculous rise in living standards). Why did it start in the eighteenth century and why in a small corner of the north Atlantic economy? Her argument, in a nutshell, is that in a few core areas in the western part of Europe, the prestige and social standing of economically active and ambitious "bourgeois" agents — merchants, entrepreneurs, innovative industrialists and farmers, bankers and so on — began to increase. The Bourgeois "revaluation" or "deal" is what accounts for modern economic growth. "There was a sharp rise in society's receptiveness to improvers". Slowly, and in the face of much resistance, people began to accept the notion that trade and voluntary transactions between consenting adults were improving for all sides. The world was understood to be positive-sum.

In other words, the culture (a word she eschews, but that seems unavoidable here) of society as a whole mattered, not just the beliefs of the main actors (that is, entrepreneurs, businessmen, inventors, and engineers) themselves. Not much else changed in Europe before the Industrial Revolution, she feels, that would explain the take-off that led into the Great Enrichment. "We must look to ideas, which

1 Joel Mokyr is Robert H. Strotz Professor of Arts and Sciences and Professor of Economics and History at Northwestern University and Sackler Professor at the Eitan Berglas School of Economics, Tel Aviv University.

2 The following is based in some part on my forthcoming *A Culture of Growth*: *the Origins of the Modern Economy*, Princeton University Press 2016. It also draws on my review essay "The Bourgeoisie and the Scholar: a Review Essay of Deirdre N. McCloskey, Bourgeois Equality: How Ideas, not Capital or Institutions, Enriched the World." *Erasmus Journal of Philosophy and Economics*, volume 9 issue 2, Summer 2016, pp. 53-65.

did change at the right time in the right places, and greatly" as she puts it (McCloskey, 2016, p. 470). I cannot possibly disagree: indeed, my own *Gifts of Athena* (Mokyr, 2002) and my *Enlightened Economy* (Mokyr, 2009) make a similar point. But McCloskey emphasizes a slightly different angle. She is fascinated by the hierarchy of values. The hierarchy of values in every society determines which human occupations have high social prestige, what careers young men and women choose, and how hard they try to succeed. In a military-oriented society they will stress heroism and physical prowess, in a scholarly society they will strive to become learned in the books that matter. In a capitalist society in which commerce and economic success are respected, entrepreneurship and self-enrichment will have social prestige. Profitable innovation will thrive and economic prosperity will ensue. But profits were not everything, in McCloskey's eyes, much less the only thing. People are not just driven by greed ("prudence" in her somewhat quaint nomenclature), they have ethical beliefs and care what others think of them. For a scholar trained in modern economics, this is a bold, heterodox thought. But it may have the advantage of being correct.

Professor McCloskey cites me (2016, p. 511) as having written that "economic change depends, more than most economists think, on what people believe." That message, obvious as it may sound, needs to be stated and re-stated, to rid ourselves of the relics of historical materialism. Like Professor McCloskey I believe that words and ideas "caused" the modern world — perhaps with some good luck and good institutions thrown in. Moreover, we agree that the critical centuries between Columbus and the publication of Newton's *Principia* in 1687 were the formative years in which everything changed in Europe and an irreversible cascading movement toward an increasingly productive technology was set in motion.

The question is *what kind* of beliefs and knowledge mattered here and *whose* beliefs. Unlike Professor McCloskey, I believe that the cultural beliefs of the intellectual elite were a pivotal factor in the story, and that natural philosophers, physicians, mathematicians, engineers, astronomers, instrument builders, and alchemists were the people who must be regarded as the main group that changed Europe's economic destiny. This argument is becoming known as the UTHC (upper tail human capital) argument, in which it is recognized that the role of human capital in economic development needs to distinguish between *average* quality and the quality embodied in the upper tail of the distribution or the intellectual/technical elite (Meisenzahl and Mokyr, 2012; Squicciarini and Voigtländer, 2015). And if the role of the elite is recognized, which elite counts? The most

dexterous and skilled artisans? The most powerful and influential politicians? Successful merchants and bankers? Or highly educated and literate intellectuals?

While all of those groups played some role, the Industrial Revolution and modern economic growth were driven primarily by technological innovation, fueled by better knowledge of natural phenomena and regularities. The serious debate that has been taking place between scholars is whether "science" played a major role in the Industrial Revolution and the subsequent technological advances or not. If not, we can dismiss the role of such scientific giants as Galileo, Newton, Huygens, Hooke and the many others, whom we associate with scientific advances in early modern Europe and leave them out of our books on the Industrial Revolution and let them in only at a much later stage.[3] Surely one has to do more than just ask the schoolchild's question "how much science was needed to invent a spinning jenny?" There is a serious scholarly literature that discusses this point at great length, and they have made powerful argument to see the Industrial Revolution in its intellectual context (Jacob, 1997; Mokyr, 2005). The argument is basically that if we see technological progress as the main driving force of the Industrial Revolution that propelled productivity growth, the rise of the factory system, urbanization, the expansion of trade and finance, the transport revolution and everything else, we need to engage the basic insight that technology cannot be divorced from its intellectual background. In the end, technology is something we *know*, much like a monstrously large set of recipes, and we can define it as *prescriptive* knowledge following a famous distinction proposed by Michael Polanyi (1962a).

It may be more useful to think about the role of science in the Industrial Revolution not as a binary variable as in "it mattered or not," but more in terms of a continuous support variable that measures how much of the physical or chemical processes that made a technique work were understood by its inventor.[4] At times the answer is practically nothing (for instance in the case of smallpox vaccination, which was developed by Jenner in 1796 without having any idea of the immunological phenomena he was exploiting). At other times, such knowledge has to be larger: one cannot build an MRI machine or a nuclear power station without an understanding of the underlying physics. The case of the steam engine is another example: the science underlying engines required an understanding of thermody-

3 For strong statements that minimize the role of science in the Industrial Revolution, in addition to McCloskey (2016) see especially Hall (1974) and Mathias (1979). The *opus classicus* in this literature remains Musson and Robinson, 1969.

4 I have termed this support the "epistemic base" of a technique in Mokyr, 2002.

namics, about which the first ideas date to the mid-1820s, more than a century after Thomas Newcomen and half a century after Watt. But, as already noted, the epistemic base of steam engines could not have been completely empty in 1712 when Newcomen installed his famous Dudley Castle engine, otherwise the idea of creating a vacuum through condensation and using atmospheric pressure to move a piston would never have occurred to anyone.

To assess the impact of the intellectual elite on subsequent economic development we can deploy the concept of a "market for ideas" — a concept proposed as early as 1962 by Michael Polanyi (1962b) and later elaborated on by leading economists such as George Stigler (1965) and Ronald Coase (1974). New ideas are placed on the menu of the social conversation all the time. If its proponent, or one of her supporters, persuades another person to change his mind about some belief or supposition, a "sale" has occurred. Of course, no money changes hands in this "transaction." Yet creative intellectuals understand and play the persuasion game all time. The most desirable attribute for an intellectual to attain is not to be rich or "trade-tested," not even necessarily to be "correct," but to be *influential*. John Calvin, Francis Bacon, and Isaac Newton, each in their own way, influenced their times more than almost anyone else. Indeed, in the market for ideas they can be regarded as "cultural entrepreneurs" (Mokyr, 2013). The test of a well-functioning market — whether the market for ideas or that for any other product — is that it allows successful entrepreneurs to come into their own. Paracelsus, Harvey, Descartes, Galileo, and Leibniz were all intellectual superstars, in a world in which the economics of superstars became increasingly applicable. But right behind them marched a small army of thousands of famous and obscure innovators — intellectuals, physicians, craftsmen — who placed new items on the ideational menu.

Moreover, the test of a successful market is that it can overcome market failures. The most obvious failure here was the appropriability problems that any idea is subject to: once it is expressed and communicated, the originator has no further control over it and cannot exclude others from acquiring it. Hence the producer of ideas has no way of securing any kind of rent-flow to reward her or his efforts. In early modern Europe, this problem was increasingly resolved by awarding recognition and credit to the first person who claimed the new idea. Such recognition had far-reaching consequences. Innovation became attractive, because it held the possibility of fame, and fame meant patronage, economic security, the approbation of peers, and ego-stroking. It is the culture of these people,

the intellectuals in the upper tail of the human capital distribution, that mattered above all. The culture of open science they created is still with us, and it still serves science and technology well.

Furthermore, any discussion of the exact role of "science" in the Industrial Revolution must be specific and precise about what is meant by science here. The linear model that maps the historical lineage of techniques to scientific insights ignores the constant give and take between science and technology. Equally important, it needs to recognize that in addition to scientific knowledge and the formulation of laws, such as the ones laid down by Newton or Lavoisier, there were scientific method and scientific culture. By method I mean the use of mathematics, the careful design of reproducible experiments, the emphasis on precision and quantification, and controlled investigation of causal effects. Scientific "method" analyzed technical problems logically by breaking them into components that could be more easily analyzed separately than as part of a whole (Pacey, 1975, p. 137). By scientific culture I mean the Baconian assumption that nature's rules were universal and discoverable and should be harnessed for material improvement. These beliefs were adopted by practical people, not just theorists and experimentalists. The great engineers of the Industrial Revolution such as Thomas Telford, John Smeaton, and John Rennie moved effortlessly between experimental science and practical applications. George Stephenson, a remarkable example of this ability himself despite his lack of a formal education, wrote of the great Smeaton as having a "truly Baconian mind" -- a description that fits an entire class of British engineers active between 1760 and 1830. Many of the entrepreneurs who made the Industrial Revolution were informed by science, and when they fell short in their knowledge, they sought the counsel of expert professionals (for details, see Mokyr, 2009, p. 54).[5]

The literature on the role of science in the Industrial Revolution is mirrored in the debate on the role of artisans in historical technological change. Some scholars such as Epstein (2013) or Berg (2007) have argued that an economy of imitation and slow cumulative tweaks and improvements introduced by artisans might have been enough to sustain technological progress for a long time. The

5 A good example was the industrialist William Strutt (1756-1830), the eldest son of the legendary Derbyshire cotton master Jedediah Strutt, a learned and well-read intellectual, and a friend of Erasmus Darwin, the Bentham brothers, Samuel Taylor Coleridge, and Robert Owen. He pioneered new architectural designs for heating, experimented with fireproof buildings, and helped found the Derby Philosophical Society.

problem is, as they recognize, that to make more dramatic quantum leaps in technology that radically alter not just the design but the principle of a technique, one needed some kind of insight that more often than not came from someone outside the craft, and typically some kind of intellectual. Adam Smith expressed this kind of elitism when he noted that "to think or to reason comes to be, like every other employment, a particular business, which is carried on by very few people who furnish the public with all the thought and reason possessed by the vast multitudes that labour." The benefits of the "speculations of the philosopher ... may evidently descend to the meanest of people" if they led to improvements in the mechanical arts (Smith, [1776] 1978, pp. 569–72).

It is more fruitful to see the intellectual roots of the Industrial Revolution as a deep complementarity between natural philosophers and artisans, between knowledge what and knowledge how. This complementarity was quite strong in the sense that without one of the two, the progress of the other would have been seriously impeded. Artisanal knowledge could surely take production technology a great deal forward through learning by doing and cumulative incremental improvements. A perfect example is given by the British watch industry in the eighteenth century, in which prices declined and quality improved at an impressive rate (Kelly and Ó Gráda, 2017). Ocean shipping improved steadily as well, due to design changes and improved navigational instruments despite maintaining wood as the basic material from which ships were constructed and wind power as its propulsion mechanism. Yet in the end these ships could not compete with metal ships propelled by steam. At the same time, radically new designs required skilled mechanics and technicians, especially ironmasters and instrument makers, to be perfected and scaled-up. Without these skills, the inventions of Watt, Murdock, and Hargreaves would have remained unfulfilled promises.[6]

Nobody argues that the entire Industrial Revolution can be explained by scientific progress, nor that the connections between scientific breakthroughs and technological progress were straightforward. There was feedback going from artisanal and later industrial techniques to science. The old adage that steam engine

6 The most famous of these mechanics and iron makers was John Wilkinson, whose Bradley works pioneered new boring machines that were able to produce the cylinders Boulton and Watt needed for their engines with unrivaled accuracy. But many others could be mentioned: Charles Gascoigne, who took over the failing Carron ironworks in Falkirk (Scotland) in the 1760s and rescued it through relentless improvement and prudent management, and Bryan Donkin, famous for his improvements to the mechanized papermaking machine, who was also the inventor of the tachometer, a steel nib pen, and the metal tin for canned food.

did more for science than science did for the steam engine is one of those half-truths that scholars love to tell their undergraduate students. What seems beyond controversy is that the causal connection from science to industry became more powerful as time went on in the nineteenth and twentieth centuries, even though invention based on intuition, serendipity, dexterity, and pure dogged perseverance never quite disappeared. Perhaps the emphasis placed by Jacob and Stewart (2004) on "Newtonianism on the shopfloor" in the eighteenth century is a bit overdone. But the dismissal of any role of formal and codified knowledge in advancing technology and the scientific discourse that led to the triumph of the Baconian program in the West is simply unsupportable.

The examples of science in the service of industry as early as the first part of the eighteenth century and with ever greater force during and after the Industrial Revolution are just too important to ignore (Jacob, 2000; 2007; 2014). The example of the work of French mathematicians and English experimentalists on hydraulic technology is well known — it led to much improved water mills and later turbines (Reynolds,1983). So, of course is the work of eighteenth-century Swedish and French chemists on the use of chlorine (a recently discovered substance) in the service of the cotton industry. Less well-known but of great importance was research in pneumatic chemistry, which led to the controlled burning of gas and the gas-lighting industry, one of the most successful and dramatic advances of the Industrial Revolution (Tomory, 2012). The budding science of geology turned useful when it was realized that fossils could be used to prospect for coal (Winchester, 2001). Steam power, of course, presents the odd mixture of formal propositional knowledge and the kind of high level imaginative craftsmanship that men like Watt, Smeaton, and Rennie embodied. But without the "experimental philosophy" of natural scientists such as Torricelli, von Guericke, Huygens, Boyle, and Denis Papin, the critical understanding of atmospheric pressure and the potential of creating a vacuum through condensation would simply not have come about.[7] Even that most famous artisan-inventor, John Harrison, who perfected the marine chronometer to help resolve the age-old longitude at sea problem, could not possibly have done his work without the prior insights of mathematically-trained geographers and astronomers —the first of which was the Dutch (more accurately Frisian) astronomer and mathematician Jemme Rein-

7 For a recent argument in this vein, see especially Wootton, 2015, pp. 490–95, and Cohen, 2012, pp. 476–78, 729.

erszoon (1508-1555), known as Gemma Frisius, who first suggested that what Harrison did was possible.

Moreover, even when direct scientific understanding of the natural laws that inventors and engineers manipulated were absent, fortune favored prepared minds, as Pasteur famously remarked. Joseph Priestley, the discoverer of oxygen and a liberal and progressive yet deeply religious enlightenment *philosophe*, was also the inventor of carbonated drinks and pencil erasers. Modern chemistry as we know it now was first formulated by Antoine Lavoisier, his wife Marie-Anne Pierrette Paulze Lavoisier, and his students. Within a generation this new chemistry already found a myriad of uses through the work of, among others, Lavoisier's countryman Michel Eugène Chevreul, who discovered the nature of fatty acids and turned the manufacture of soap and candles from an art into a science. As director of dyeing at the *Manufacture des Gobelins*, he had a direct interest in the chemistry of dyes and colors. The original work on the chemistry of dyeing that had been carried out by his predecessor at the *Gobelins*, Claude Berthollet, the inventor of chlorine bleaching and one of Lavoisier's most illustrious followers. Britain's most famous scientist of the early nineteenth century, Humphry Davy, invented the so-called miner's friend, a safety lamp that reduced the risk of mine explosions (1815). It allowed the opening of many deep coal seams that without the lamp "would never have seen the light of day," as the prominent mining engineer and Davy's partner, John Buddle, rather quaintly put it (cited by James, 2005, p. 212). It has been argued that Davy's considerable knowledge of chemistry was of no direct help in developing the lamp. Yet if we expand our definition of useful propositional knowledge to include, in addition to formal science, the growing catalog of tricks, gimmicks, and rules of thumb that worked and the better understanding of combustion, heat, resistance, lubrication, plasticity, chemical reactions, and mechanics that had accumulated, it is clear that growing useful knowledge was behind many of the nineteenth-century technological advances.

Even more important than the actual scientific insights of the seventeenth century were the meta-ideas that gained acceptance in the intellectual discourse of early modern Europe on how to gather and evaluate propositional knowledge, whether it qualifies as "science" or whether it was just some empirical observation about the behavior of materials and heat. Among these meta-ideas, the ones with the most dramatic impact for the eventual Great Enrichment were three. First, the triumph of experimentalism, the understanding that results from experiments — contra Aristotle — were a valid way of verifying hypotheses in natural philos-

ophy. This idea gained popularity after Bacon's strong advocacy and by the time of Newton and Hooke had become a consensus. Experimental science required a high degree of precision in both workmanship and materials, standardization of terminology and units, and a clear and detailed communication of experimental procedures so that it could be reproduced and verified. Second, research became more formal, mathematical and quantitative wherever possible. Galileo famously wrote that the book of nature was written in the language of mathematics, and by 1650 it had become impossible to do serious physics without a strong training in mathematics. Finally, science developed an inductive side when formal mathematical analysis would not do; plants and stars could be observed, counted, catalogued, and classified. Patterns and regularities would emerge, perhaps, to show how nature worked. But until then organizing the facts and making them accessible was the order of the day.

The growing influence of the Baconian ideal of science in the service of society in Europe led to a change in the social status of intellectuals. Creative minds wanted to be recognized in society, and the changing hierarchy of values affected the social standing of natural philosophers and intellectuals. Leading intellectuals stressed the value that they could bestow upon their societies — often making exaggerated and self-serving claims. The intellectual superstars of the age were invited to royal courts and the most prestigious salons, and were attaining a social status comparable to that of the old aristocracy.[8] Eighteenth century Britain honored Newton more than Marlborough. To be sure, patronage — the driving factor on the demand side of the market for ideas — started off largely as an aristocratic venture, but the urban bourgeoisie and merchants demand for information and interest in science (did "curiosity," once a vice, begin to count as a "virtue"?) added fuel to the engine of progress, as documented by Harold Cook (2007). This change in the social standing of intellectual pursuits is reflected in the so-called virtuosi movement, an upper class fascination with learning and intellectual pursuits that combined the features of scholar and gentleman into a serious if perhaps somewhat amateurish intellectual. The courtier could become a scholar, and culture for social ornament passed into learning for fame and admiration (Houghton, 1942, p. 61). Their enthusiasm and sometimes naiveté created

8 The Habsburg Emperor Rudolf II (ruled 1572–1612) collected a large number of scientists and artists at his court in Prague (at that time the Imperial capital). The astronomers Tycho Brahe and Johannes Kepler were both members of the Habsburg court, as was Carolus Clusius, né Charles de l'Écluse (1526–1609), one of the founders of modern botany (Evans, 1973).

a dilettantism that made them the butt of ridicule. Nonetheless, these people stressed the compatibility of intellectual activity and "politeness" and "virtue." Robert Boyle, John Evelyn, and the aristocratic mathematician William second Viscount Brouncker (1620– 1684), the first president of the Royal Society, must be regarded as virtuosi. Such role models raised the prestige of intellectuals in society even if few of those virtuosi contributed materially to the growth of science in the eighteenth century.

Perhaps the most significant transformative meta-idea that set early modern Europe apart from all other societies that preceded it and coexisted with it was its ability to shed the paralyzing respect for the iron grip of past learning. For some reason, humans seem to be hardwired to honor the wisdom of their ancestors and to feel inferior in the face of past learning. Whether the Talmud, the Koran, Confucius, or Aristotle and Galen, there seems to be a pervasive belief that the truth had been revealed to our ancestors, and that true wisdom and insights were to be found by poring over ancient writings and exegesizing them until the true meaning was revealed. In the sixteenth century, the respect for ancient wisdom was irreparably weakened. In 1580 an Oxford Don could still be fined five shillings for teaching something that was contradictory to the writings of Aristotle. But Oxford was behind the curve: by that time the classical canon had come under fire from every corner. The intellectual world of the fifteenth century was still in the shadow of classical learning, but in the sixteenth century and beyond, it had morphed in the world of insolent rebels such as Paracelsus, Harvey, Vesalius, Ramus, Brahe, and so many others. Driven by new observations and information, they ripped the classical texts in physics and medicine to shreds, and subjugated them to what they believed to be persuasive evidence and logic. A new world of useful knowledge was created.

As Professor McCloskey would say, the rhetorical rules of what was true and what was not changed, since they themselves were the subject of the intellectual discourse. The line "Aristotle (or the Bible) said so, hence it must be true" was no longer acceptable. The famous struggle between the "moderns and ancients" that took place in this period ended with a resounding triumph of the moderns. The works of classical antiquity may have retained a place in the curricula of universities, but as an authoritative source on anything having to do with the natural world they were decisively dethroned. Once the leaden burden of the authority of Aristotle, Ptolemy, Galen and other classical writers was lifted and the age of *in nullius verba* began, modernity dawned.

A fascinating example of the critical approach to ancient wisdom is the rise and fall of hermeticism. Hermeticism was sixteenth-century mystical religious movement, which counted among its followers such prominent intellectuals as Giordano Bruno and John Dee. The core of Hermetic beliefs was based on a set of ancient writings attributed to a writer named Hermes Trismegistus ("thrice great"), consisting of a mix of religious doctrines, astrology, and occult practices, such as talismans with great powers and the virtues of certain plants and stones (Yates, 1964, p. 2). The Hermetic books were part of a larger body of what was known as *Prisca Theologia*, books believed to be by ancient sages antedating both the Hebrew Bible and the earliest Greek sages and containing a body of knowledge that reflected the pure *ur*-religion from which all later wisdom originated. Their alleged antiquity and the belief that they antedated the Bible gave these books an aura of authority. In 1614, however, the Huguenot classical scholar Isaac Casaubon published a devastating analysis of the Hermetical writings. He established beyond serious doubt that they dated from the second or third centuries AD and were a Greek pastiche of ancient and biblical texts rather than a divinely inspired book by a much more ancient Egyptian writer (Grafton, 1983). The foremost scholar of Hermeticism goes so far as to state that Casaubon's book was a watershed event, separating the Renaissance world from the modern one Yates (1964, p. 398).

The loss of respect for ancient learning was coupled with a growing belief in human progress. Much has been written about the history of the idea of progress, which became an organizing concept in Enlightenment thought even if not all eighteenth century writers shared it equally and there was disagreement about what "progress" exactly consisted of. Roughly speaking, the ideas discussed in the early modern Europe market for ideas were whether progress was at all possible and whether it was desirable, and if the answer to those was positive, how exactly to bring it about. Natural philosophy was an important organizing principle here. The achievements of Copernicus, Galileo, Harvey, Vesalius, Boyle, and above all Newton gave intellectuals the confidence that propositional knowledge could advance continuously, and that such knowledge would eventually be harnessed and applied to make material conditions better.

The critics of the role of science are of course correct in pointing out that in the early stages of the Industrial Revolution, the tangible achievements of science were modest. Many scientific areas in which progress would yield its highest fruits in the Great Enrichment turned out to be much messier and more complex than

expected. The hopes that eighteenth-century post-Newton scientists had to Newtonize chemistry, medicine, biology, and agricultural science were all disappointed in the short run. In 1759, as in 1776, the Great Enrichment was still more a hope and an aspiration than a reality. How to make cheap steel, how to tame electricity, how to communicate over larger distances at lightning speed, how to end the scourge of smallpox, and what made crops grow more abundantly and reliably were all still problems with which the best minds of the eighteenth century were struggling. In the century following *The Wealth of Nations* they were all solved. Can one really tell the story of the Great Enrichment without them?

What was driving this progress? The economist's first intuition is to look for incentives. This is not to say that those who pushed the envelope were driven purely by material motives, much less by greed. A few of them were wealthy or at least comfortable enough to make worries about their means of subsistence of no concern. Yet they cared about their reputation and were concerned with being recognized for their innovations. Even a wealthy scientist such as Robert Boyle eventually became sufficiently annoyed by people using his work without attribution to instruct Henry Oldenburg, the secretary of the Royal Society, to produce a catalog of his writings to secure his intellectual property rights in this research (Shapin, 1994, p. 183; Hunter, 2009, p. 190). The Dutch microscopist Anthonie van Leeuwenhoek made his living as a merchant and city official, yet sent many reports about his discoveries to the English Royal Society, which elected him a member in 1680. Membership in the Society was a source of pride for him, as he had it engraved on his tombstone and a painting of him by Jan Verkolje shows him proudly displaying his Royal Society diploma of membership. Beyond such personal pride and sense of accomplishment, some of the most distinguished intellectuals of the time were driven by purely intrinsic motives, that is, curiosity and challenge of wanting to solve some riddle.[9] Yet most natural philosophers needed to make a living from some form of patronage or another, and patronage depended on reputations.

The beliefs of the large masses — bourgeois, workers, and peasants —

9 Newton himself had to be persuaded by Edmund Halley to publish the third volume of *Principia* and in many ways does not fit the picture of anyone driven by extrinsic motivation. During his so-called "years of silence" at Trinity College prior to the publication of *Principia* in 1687, Newton worked on a large number of projects that seem understandable only through pure intrinsic motivation. Among them were unpublished essays on theology, a detailed plan of the Jerusalem temple based on the scriptures, and an enormous number of writings on chemical problems which were barely known in his lifetime.

obviously mattered, because they set the background parameters in which all entrepreneurs work. But beliefs of the many fewer actors who actually pushed the envelope may have mattered more. This actually provides some support for McCloskey's belief that some element of good fortune was involved in addition to circumstances and geography. As David Hume wrote in 1742, "Those who cultivate the sciences in any state, are always few in number: The passion, which governs them, limited: Their taste and judgment delicate and easily perverted: And their application disturbed with the smallest accident. Chance, therefore, or secret and unknown causes, must have a great influence on the rise and progress of all the refined arts."

Why, then, did this market work so much better in Europe than anywhere else? As many scholars have stressed, the political fragmentation of Europe ensured a high level of competitiveness and made it practically impossible for any reactionary power, secular or religious, to put an end to heterodox and innovative ideas — including not only the idea that making money through hard work and ingenuity was virtuous, but also that the earth was not the center of the universe and that organisms did not sprout spontaneously. The reason for this success was that Europe had the best of all possible worlds. Superimposed upon the 156 separate political entities that emerged out of the Peace of Westphalia was a pan-European transnational institution known as the *Respublica Literaria,* a virtual network of communications (mostly through letters) and conversation of literate men and women. This Republic of Letters created an integrated European market for ideas in which intellectual innovations were discussed, vetted, tested, criticized, revealed as fraudulent or hailed as revelations. Its citizens (they actually thought of themselves in those terms) exploited the scale economies that made such an institution work precisely because it was international. The Republic of Letters was the institutional foundation of a well-functioning market for ideas. It did exactly what well-functioning institutions are supposed to do: it created the incentives and rewards for people who came up with ideas that others accepted. It facilitated the exchange and circulation of useful knowledge, so that those who could use it most effectively had relatively easy and inexpensive access to it.

In Mokyr (2016), I discuss this market primarily in the context of beliefs regarding natural philosophy and the understanding of the physical and biological world. But the Great Enrichment involved a lot more than that. Ideas about physics, chemistry, botany, and disease were one half the story; the other half was about the way society and government should be structured to provide the institutional

framework for economic growth. These two sets of ideas created the great synergy that made for modern economic growth. The beliefs concerning institutions and governance that triumphed in the market for ideas in the age of Enlightenment were essential in bringing about the Great Enrichment. First, exchange and trade was positive-sum. If foreign nations gained from trade with your nation, that did not mean that your nation lost: *both* sides stood to gain. Don't fight with foreigners, trade with them. Trade beats glory. Second, rent-seeking (which was what mercantilist policies were all about) was associated with large deadweight losses. Monopolies, tariffs, subsidies, cozy sinecures — what the French called *privilèges* — were all leaky buckets in which the gains to the winners were smaller than the losses of those who paid the price. Third, the role of government was not to enrich itself or its cronies or gain glory by hacking and stabbing other people to death, but to provide the citizens with goods and services that the free market for one reason or another failed to supply. Those three ideas amounted to the "institutional flip side" of the Enlightened Economy. Without the liberal politics and the reforms they produced, the progress of useful knowledge might never have produced the factories, railroads and electric power that the nineteenth century West built and that laid the foundation for the Great Enrichment. Ideas, indeed, drove the economy.

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Commerce Unbound: A Modern Promethean Story

Jan Osborn,[1] Bart J. Wilson,[2] and Gus P. Gradinger[3]

I claim in what follows that neither left nor right, neither the Department of English nor the country club—nor the center, eyeless in Starbucks, uneasily ruminating on morsels taken from both sides—is seeing bourgeois life whole.

~Deirdre N. McCloskey, The Bourgeois Virtues

Preface

Like the Greek tragic writers before him, the Romantic poet Percy Shelley unbinds his version of the Promethean myth from the common interpretation of his ancient predecessors. With no interest in the "supposed" reconciliation of Jupiter and Prometheus in the second play of Aeschylus' trilogy, Shelley argues that the "moral interest of the fable" would be "annihilated" if Prometheus were to shrink before the great oppressor of humankind (Shelley, Percy "Preface" 80-81). For Shelley, "Prometheus is, as it were, the highest type of perfection of moral and intellectual nature, impelled by the purest and the truest motives to the best and noblest ends" (81). If that sounds idealized, that's because it unabashedly is. As Northrup Frye explains in his study of Romanticism, "The arts illustrate the form of the world that man is trying to create out of the world he is in" (125). Frye argues that the Romantics have a strong "moral force" in

1 Jan Osborn is Associate Professor of Department of English & Smith Institute for Political Economy and Philosophy.

2 Bart Wilson is Professor of Economics and Law, Smith Institute for Political Economy and Philosophy & Economic Science Institute.

3 Gus Gradinger is an Investment Analyst, Prologis.

their work, an attempt to express an ideal. "Everybody needs a sense of reality about the world out there," he says, "but, for the Romantics, everybody also needs some kind of vision for a better world that man can create" (126). Mary Shelley explains further in her notes to *Prometheus Unbound*: "More popular poets clothe the ideal with familiar and sensible imagery. Shelley loved to idealize the real—to gift the mechanism of the material universe with a soul and a voice, and to bestow such also on the most delicate and abstract emotions and thoughts of the mind" (421). In Shelley's version, Prometheus is the "Champion" of humankind, the idealization of real human beings, a soul and a voice for an imperfect race.

We presume to exercise a similar discretion in being unbound as we lead a contemporary audience back to Shelley's 19th century Romantic drama; for the questions—to what? to whom? for what? by whom are we bound?—persist. And what freedoms, what possibilities, abound for humankind if we are, indeed, unbound? What *is* the moral interest of the Promethean story in the 21st century? Modern readers may take the word *commerce* in our title to mean what the Oxford English Dictionary defines in sense (1a) as "buying and selling together; trading; exchange of merchandise." We certainly mean that, and all of what that entails. But we also mean it *equally* in the less familiar, distinctly uncommercial, social sense of definition (2a): "intercourse in the affairs of life."

By the second definition, humans have always lived in a Condition of Commerce. A defining characteristic of all primates is that we live together in social groups and take pleasure in being in each other's company. Kith and kin are a primary affair of human life. Early in the 1800's, though, a New Age of Commerce—one marked by an exponential growth of commerce (1a)—emerged in conjunction with the original Condition of Commerce. Prior to the 19th century, the average person lived on the modern equivalent of less than $3/day (McCloskey 2010, 1). Beginning in London and spreading throughout England and then Continental Europe, world GDP per capita began to increase slowly at first and then exponentially, such that the average person on the planet now lives on almost ten times the historical average (McCloskey 2010, 1). Many are surprised when they hear that the average Botswanan today consumes more goods and services than the average Finn in 1955 (Ridley 15), or that the average Indian has a longer life expectancy today than the average Scot in 1945 (Deaton 101). And yet, despite living on an average $120/day (or over four times the world average), many Americans on both the left and the right, including U.S. Senators who live on *at least* $476/day, feel oppressed in the New Age of Commerce. For those on

the left, it is the Jupiter of commerce (1a), more commonly known by the unfortunate epithet "Capitalism," that binds their commerce (2a), and for those on the right, it is the Jupiter of Government—with a capital "G"—that binds their commerce (1a). And both are fuming at their oppression.

A candid word is due to the degree in which a particular contemporary scholar suffuses our essay, for she has been a topic of censure in prior work. Deirdre McCloskey's trilogy on "The Bourgeois Era" is unfashionable and contrarian, and she's not shy to tell anyone and everyone—left, right, and center—in uncompromising terms that what they think about economics and the modern world is wrong (McCloskey 2006, 2010, 2016). Well, "wrong" is how we read it in our heads. In each of the three volumes she actually asks us to politely "consider" that we "might be mistaken." But it's easy for nearly everyone to forget the difference after being told:

> Anyone who after the twentieth century still thinks that thoroughgoing socialism, nationalism, imperialism, mobilization, central planning, regulation, zoning, price controls, tax policy, labor unions, business cartels, government spending, intrusive policing, adventurism in foreign policy, faith in entangling religion and politics, or most of the other thoroughgoing nineteenth-century proposals for governmental action are still neat, harmless ideas for improving our lives *is not paying attention* (2006: 50-51, italics added).

Economists, reviewers of our prior work in particular, often take issue with her "iconoclastic," "dogmatic," and "sloppy rhetoric" of what she calls Max U, the self-interested person who maximizes his or her own utility.[4] Or as another reviewer puts it, "anyone that quotes McCloskey (2006) as anything less than muddled and embarrassing is not really opening the covers of the book."[5] We have indeed read the books, two of them several times in courses, and wethinks thou dost anonymously protest too much. McCloskey's project is to overturn the century-and-a-half assumption that economics and ethics are two distinct disciplines and never the twain shall meet. That's not going to come about without a little resistance, but that precisely is the project with which we are engaging. McCloskey argues that not only do we make prudent, Max U decisions in commerce,

4 Publisher correspondence to Wilson dated August 3, 2016.
5 Journal correspondence to Wilson dated April 13, 2009.

but we also practice in both types, OED (1a) and (2a), the virtues of faith, hope, love, courage, justice, and temperance. But the greatest of these is love.

Permit us the opportunity to acknowledge that we are experimenting with integrating economics and ethics in a form that could be described as literary-critical economic nonfiction. Orthodoxy for the sake of orthodoxy is our aversion. We map our economic subject matter into an interpretation of *Prometheus Unbound* to revivify commerce as Shelley revivifies the Promethean story in his lyrical drama. In doing so we make Shelley's purpose our own, "to familiarize" our readers

> with beautiful idealisms of moral excellence; aware that until the mind can love, and admire, and trust, and hope, and endure, reasoned principles of moral conduct are seeds cast upon the highway of life which the unconscious passenger tramples into dust, although they would bear the harvest of his happiness. (85)

This entails choosing subject matter, unrepentantly, from the world as we see it, as we comprehend it, but with verifiable and recognizable features. For our own part, we would rather be damned with McCloskey, than go to heaven with reviewers cloaked in robes of anonymity. With the fallen world lay spread before us, we now set out to explore where Shelley's idealisms take us.

An Interpretation[6]

In Shelley's *Prometheus Unbound* we meet our hero bound for three thousand years to the cliff of the Indian Caucasus. Here, in the opening of the first act, Shelley makes clear that he is breaking with the Aeschylean trilogy, for even the setting has been changed, moved from the European to the Indian Caucasus, the birthplace of humankind. Humans are living as "slaves" (Shelley, I, 5) with "fear and self-contempt and barren hope" (I, 8). Yet Prometheus (the Titan who inhabited Earth before humans) does not "share the shame" (I, 18-19) of Jupiter's tyranny. He hangs on the rock punished for checking "The falsehood and the force of him who reigns/Supreme" (I, 127-128). Jupiter punished Prometheus for giving gifts to mortals, gifts far beyond the fire of the gods: intelligence and reason, speech, memory, medicine, divination: "All useful arts on earth spring from Prometheus!" (Aeschylus, 51) or as added in Shelley's telling, "He gave man speech, and speech created thought/Which is the measure of the universe" (II, iv, 72-73).

Shelley's version of the myth makes clear the agreement Prometheus made to help Jupiter overthrow Saturn, the god who refused humans their birthright:

6 With thanks to Lilian Steichen in her 1904 study of *Prometheus Unbound*.

> The birthright of their being, knowledge, power,
> The skill which wields the elements, the thought
> Which pierces this dim universe like light,
> Self-empire, and the majesty of love. (Shelley, II, iv, 39-42)

Shelley's Prometheus also gave "wisdom, which is strength, to Jupiter" (II, iv, 44), helping him defeat Saturn with one stipulation, "Let man be free" (II, iv, 45). But the stipulation is not met. Jupiter breaks the deal, depriving humanity of liberty and binding Prometheus, representative of humanity, to the rock of humankind's very birthplace.[7]

Jupiter remains the tyrant of Aeschylus' *Prometheus Bound,* "wreck[ing] his utmost hate" on Prometheus, "Loosing all his stores of wrath" (Aeschylus, 77). But while the stipulation looms over the opening of Shelley's play, Jupiter and Prometheus are connected beyond the broken agreement. This "Monarch of Gods," this Jupiter who did not let humankind be free, still rules all but Prometheus, all "But One." Shelley connects the tyrant and the bound Prometheus in hate: *both* behold the world with "sleepless eyes" (Shelley I, 1-4); Jupiter, a tyrant, ruling humans through fear and lack of hope, and Prometheus, "eyeless in hate" (I, 9), ruling over "torture and solitude/Scorn and despair" (I, 14-15).

While Jupiter needs Prometheus because he alone knows, "a secret. . ./Which may transfer the scepter of wide Heaven,/The fear of which perplexes the Supreme"; Prometheus is filled with hatred for Jupiter's betrayal of humanity (I, 371-374). He has endured the torture; he has refused to bend his will to Jupiter's; and he has refused to divulge the secret, the prophecy. But he is bound to the tyrant as clearly as to the rock. In defying the tyrant, he perpetuates his pain but also Jupiter's power. His defiance, his enduring pain is evidence of "No change, no pause, no hope!" (I, 24). In Shelley's drama, humankind, represented by Prometheus, empowers a hateful god with its own hate, resulting in no change, no pause, no hope.[8] A vulture tears at Prometheus' heart, as opposed to his liver in Aeschylus' version. In Shelley's Romantic sensibility, humans without heart, without love, cannot imagine a world beyond the order of the tyrant.

With a malignant spirit, endurance is all. Prometheus must endure "pain, pain ever, for ever" (I, 24). Yet as he endures for three thousand years, Prometheus

7 As Northrop Frye suggests, "liberty, for Shelley, is what man wants and what the gods he invents. . . oppose his getting" (14).

8 "[Hum]ankind is treated as a single gigantic individual, which Prometheus represents" (Frye 1968, 38).

can greet his morning with the knowledge of the prophecy, that at one hour Jupiter will fall. From his misery, Prometheus has become wise and in that wisdom, "The curse/Once breathed on thee I would recall" (I, 58-59).

It seems, though, that Prometheus does not *recall* the curse in either sense of the word: to remember—"What was the curse?" (I, 73); "How cursed I him" (I, 137); "Were these my words?" (I, 300)—or to withdraw—telling Mercury, Jupiter's messenger, "Enduring thus, the retributive hour/Which since we spake is even nearer now" (I, 405-407). Although Prometheus wishes "no living thing to suffer pain" (I, 305), he does not recall the part of the curse where Jupiter will "fall through boundless space and time" (I, 301). The prophecy will hold though Prometheus says he is "changed so that aught evil wish/Is dead within" (I, 70-71). He calls upon Mother Earth to remember who he is to have the spirits repeat the curse. But the spirits fear the tyrant and dare not speak. Earth tells Prometheus he will have to call upon the spirits of the underworld, even Jupiter's own Phantasm. The Phantasm of Jupiter recalls his curse for him:

> Fiend, I defy thee! With a calm, fixed mind.
> All that thou canst inflict I bid thee do;
> Foul Tyrant both of Gods and Humankind,
> One only being shalt thou not subdue
> . . . Thou art omnipotent
> O'er all things but thyself I gave thee power,
> And my own will. . .
> Let thy malignant spirit move
> In darkness over those I love:
> On me and mine I imprecate
> The utmost torture of thy hate;
> . . . I curse thee! . . .
> Though now thou sittest, let the hour
> Come, when thou must appear to be
> That which thou art internally;
> And after many a false and fruitless crime
> Scorn track thy lagging fall through boundless space
> and time. (I, 262 – 265, 272 – 274, 276 – 279, 286, 297-301)

To learn the secret, Jupiter sends Mercury and the Furies "to execute a doom of new revenge" upon Prometheus (I, 355). Mercury stays the Furies to praise Prometheus but still calls his stand against Jupiter vain because Jupiter is omnip-

otent. Although Prometheus claims that he now pities Jupiter, that he "hate[s] no more," he is still bitter and vengeful (I, 57). When the Furies are unleashed to escalate his mental torture, Prometheus cries, "While I behold such execrable shapes,/Methinks I grow like what I contemplate," for he knows hate is their element (I, 449-450, 477). Even as he denies hate, he contemplates hate.[9]

The Furies attempt to bring Prometheus to despair by showing him the human condition, "famine-wasted" and "blood untasted" "where blood with gold is bought and sold" (I, 528-529, 531). When the Furies "Tear the veil!," revealing visions of human suffering, Prometheus is anguished, for the love he felt for humanity, his desire to awaken humans to consciousness, to freedom, has led to a new kind of misery (I, 537). Although people are calling for "Truth, liberty, and love!" (I, 651),[10] they become tyrannical, fighting against the tyrant rather than tyranny, becoming that which they despise:[11]

> Suddenly fierce confusion fell from heaven
> Among them: there was strife, deceit, and fear:
> Tyrants rushed in, and did divide the spoil.
> This was the shadow of the truth I saw. (I, 652-655)

Even though there are some who "want love; . . . all best things are thus confused to ill" (I, 627-628).

In spite of his anguish at the suffering of humankind, Prometheus cries out to Jupiter, "The sights with which thou torturest gird my soul/with new endurance" (I, 643-644). The Furies showing him the woes of humanity has not compelled Prometheus to reconcile with Jupiter, to reveal the secret of the tyrant's downfall. Prometheus will remain bound, but he will continue to control his destiny: "Yet am I king over myself" (I, 491).[12]

Were Prometheus to reveal the secret, it would be the "death-seal of mankind's captivity," for Jupiter would reign for eternity, humans destined to live where "the future is dark," Jupiter's "malignant spirit" ruling over those Prometheus loves (I, 397, 562, 276-278). Prometheus does not yet realize that Jupiter is ruling over humankind because they, and he, have internalized the malignant spirit of the tyrant.

9 "Hatred narrows and distorts the soul by restricting perception" (Cantor 1985, 82).
10 An allusion to the French Revolution's *Liberté, égalité, fraternité*.
11 "Methinks I grow like what I contemplate" (Shelley I, 450).
12 "[J]ust as man invents the wheel and then talks about a wheel of fate or fortune overriding everything he does, so he creates gods and then announces that the gods have created him. He makes his own creation, in short, a power to stop himself from creating" (Frye 1968, 88).

To ease Prometheus' suffering after encountering the Furies, Mother Earth calls upon the Spirits to comfort him. While the Furies only show Prometheus the suffering and the corruption of humankind, the Spirits provide a complete view of humanity, a humanity "heaven oppressed," to be sure, but a humanity whose thoughts "sicken not" (I, 674-675). Love still pervades humankind: a sailor sacrifices himself to give a drowning enemy his plank, a sage dreams of inspired wisdom written long ago, and a solitary poet finds love in the tender kisses of nature.

And only here, at the end of Act I, does Prometheus invoke hope in the form of love: "I feel/Most vain all hope but love" (807-808). In embracing love, Prometheus can transcend the bondage: "There is no agony, and no solace left;/Earth can console, Heaven can torment no more" (819-820). Prometheus, through love, is willed to "Be what it is my destiny to be,/The savior and the strength of suffering man" (815-817). He calls upon Asia and her "transforming presence," for "all hope was vain but love" (824). The solution to the degradation of humankind is a correspondence and community with others, a solidarity with one another that is love, but one that nevertheless importantly "begins and ends in thee" (707).

Shelley's second act furthers the Promethean call for love. The transformation for humankind is not complete, for the tyrant reigns even though Prometheus has transcended torment. Panthea sets out to bring Asia's transforming presence to mingle with the transcendent Prometheus, a commerce uniting those in exile. Like Prometheus in the first act, Asia thinks it is Jupiter who reigns and that "curses shall drag him down" (II, iv, 30). She is looking for something outside humankind to explain humanity's destiny. In recounting the story of Prometheus, she recalls Prometheus' stipulation to "Let man be free" (II, iv, 45). Asia calls upon the Demogorgon to declare who rules the ruler: "Declare/Who is his master?" (II, iv, 109). In Demogorgon's response, "All spirits are enslaved which serve things evil," Asia begins to realize that even the master is enslaved if bound by hate and that "Fate, Time, Occasion, Chance and Change," are all subject to he who reigns (II, iv, 110, 119). Asia furthers begins to realize that it is Love that doesn't change, that *she*—not a god, not an external order—must be the medium, that "Each to itself must be the oracle" (II, iv, 123). Only "sympathy," common as "light" can set the spirit free. Asia's heart gives the response she wanted from the Demogorgon. It is only in "Realms where the air we breathe is love" where humankind can be free (II, v, 95).

In Act III, the stage is set for the prophecy to come true, for the tyrant to

fall. Both Prometheus and Asia have come to realize that the tyrants' power come from their own internalization of his malignant spirit. Now the Demogorgon can confront Jupiter on his Throne, the tyrant thinking that humans still "burn toward heaven with fierce reproach, and doubt," their faith in the god creating their fear (III, i, 5-6). When this is not the case, these abstractions will "dwell together/Henceforth in darkness" (III, i, 54-55). Humans, "with the low voice of love, almost unheard" are "now free" (III, iii, 45, 48). Of course, Prometheus, representative of humanity, is unbound as well, Hercules releasing him from the rock. Asia and Prometheus are together again where they can "sit and talk of time and change" in a cave illuminated by "love, which is as fire" (III, iii, 23, 151). For humanity, there is liberty:

> The loathsome mask has fallen, the man remains
> Sceptreless, free, uncircumscribed, but man
> Equal, unclassed, tribeless, and nationless,
> Exempt from awe, worship, degree, the king
> Over himself . . . . (III, iv, 193–197)

The play ends with the chorus of spirits and hours, the chorus "from the mind/Of human kind" which had been blind is now a chorus of unity, a chorus of human love "Which makes all it gazes on Paradise" (IV, 93, 127). The spirits rejoice in building a "world for the Spirit of Wisdom to wield," a world where humanity is unbound, not by hate, not by an unyielding will against the tyrant, but, rather, unbound by transcending tyranny itself, unbound through love:

> We will take our plan
> From the new world of man,
> And our work shall be called Promethean. (IV, 156 – 158)

It is this Promethean work that is a unity of thought and love: "a chain of linked thought,/Of love and might to be divided not" (IV, 394-395). No longer can the tyrant control humanity, for its very nature is its own divine control: "Man, one harmonious soul of many a soul/Whose nature is its own divine control,/Where all things flow to all, a rivers to the sea" (IV, 400–402).

A Regeneration

Shelley's lyrical drama, we claim, has something to say for all readers—left, right, and center—as we think about commerce in the modern world. McCloskey (2006) argues that without the virtues, including transcendent love, neither the market nor the government works for our good. To this we add from Shelley, that nor with hate will the market or the government ever change, pause, and

hope to do good. For out of a fuming hatred toward either, a new tyrant will rush in amidst the strife, deceit, and fear.

Consider the new Consumer Financial Protection Bureau (CFPB) created in 2010 in the aftermath of the financial crisis of 2007-08 (speaking of strife, deceit, and fear). The CFPB is responsible for regulating consumer protection in the financial sector, including banks, payday lenders, debt collectors, and mortgage servicing operations. Unlike other independent agencies, like the Federal Trade Commission or the Securities and Exchange Commission, the CFPB has no board members, directors, or commissioners to check the head of the bureau, and can spend its money with no oversight from Congress, the President, or the Federal Reserve from whom it receives its budget. Moreover, the Director of the CFPB can only be removed for cause, and only by the President. In response to the widespread fraudulent representation of mortgage-backed securities that led to the Great Recession, a distinct disdain for Wall Street led Congress to create a new independent agency with a head that has the most unchecked power in the federal regulatory apparatus.

Or consider, the numerous calls in 2016 to deport 11 million undocumented immigrants in response to "a government failure to protect the border." What kind of inhumane, unchecked power in the name of enforcing the law would actually be required to find and physically remove 11 million people against their will? What kind of human and economic repercussions would such an order entail? What kind of *commerce* in both senses of the word would be bound? In the history of humanity, millions upon millions have never forcefully migrated without pain, suffering, and a trail of tears.

Like Prometheus, we can be woefully unaware of how hate and despair permeate thoughts on our own Jupiters of commerce. Pick your topic—raising the minimum wage, health insurance coverage, payday lending, prescription drug pricing, education financing—and below the surface you will see the elements with which Shelley shapes his story. He first portrays Jupiter as sublimely omnipotent and any bound resistance to him as vain. Because the life of someone who lives on the minimum wage is not a good one, the story of the left evokes the looming tyrant of a megacorporation, say Walmart, strong with bargaining power and flush with cash, who can bend vendors to its demands and drive competitors out of business. For many, Walmart is omnipotent. It can do what it wants, which is to pay poor people poorly and inflict misery on local mom and pop stores. The name of the god Walmart cannot be uttered without a tinge of

hate below the surface. And while there are many companies, both large and small, that do what Walmart does—pay their employees the minimum wage and deliver a product or service better and cheaper than a competitor who ultimately doesn't survive—Walmart is the god of choice for censure on deplorably low wages. Why? Because the name itself is Jovian and we can hate it.

Or when health care costs increase by 6.5% and health insurance premiums increase by an average of 25% per year but as much as 150%, many on the right direct curses toward the ill tyranny of Obamacare. For many, the Affordable Care Act is the all-prevailing foe. With the force of law the country has been shackled to purchase health insurance each year, or suffer a penalty torn from the heart of our annual income. In canvassing for our support, Jupiter promised, "If you like your health care plan, you'll be able to keep your health care plan. Period." But after the overthrow of our Saturnic health care system, he did not live up to his end of deal. To that, critics decry:

> "Obamacare, we defy thee! Ay, do thy worst.
> Bring on thy deliberative panels
> To blast the dying, from yon government tower.
> We curse thee; till thine omnipotent exchanges
> Death spiral into a crown of pain."

If these words of hate sound a bit strong, they are. But, boy, are curses fun to wield and to heap upon those whom we think have oppressed us. We thrive on censure, condemnation, and scorn; it feels good to blame and denounce Jupiter. But the bitter truth we must face is that our righteous and lefteous fury, fueled by visions of hardships and suffering, is rarely the complete picture. And moreover, such fury tempts the champion in us to despair, which only further feeds the growing disdain within our breast and tightens the blinders around our field of vision.

McCloskey's project and ours is to show modern bourgeois life whole, and Shelley's point and ours is that any socio-economic revolution, whether from the left or the right, will ultimately fail, like the French Revolution ultimately failed, if it is fomented by despair, anger, and hate. To see modern life whole, we politely ask you to consider that "modern capitalist life [may indeed be] love-saturated" and that our work for socio-economic change, if it is to ultimately succeed in human flourishing, must be rooted in a love that *begins and ends in thee* (McCloskey 2006, 138). If there is but one takeaway from this essay, it is that we wish our readers to be more attuned to the self-imposed pessimism that binds modern discourse in the New Age of Commerce, for "beyond our eyes,/The human love

lies/Which makes all it gazes on Paradise" (IV, 126-129).

How many modern cries for revolution, for social change, begin with an honest and frank assessment of the "trust, good humor, neighborliness, respectfulness, cooperativeness, [and] decent intentions" that pervade "our daily lives" of commerce (McCloskey 2006, 127)? None. And yet our daily commerce (1a) is filled with an uncountable kindnesses. Recall your activities for the past week. How many times did you entrust your wellbeing to a stranger? Every time you encountered one at the department store, grocery store, coffee shop, restaurant, discount retailer, gas station, airport check-in, Uber pickup, hotel, movie theatre, sporting event, concert, art museum, etc., etc. How many times did you thank and exchange a smile and pleasantries with a customer, clerk, client, barista, server, associate, attendant, driver, or concierge? If the answer is you didn't or can't remember ever doing so, it's time to unbind yourself. They did something good for you, and you them. And while it may only have been a moment of solidarity, it was a genuine moment of fellow feeling among strangers, whether either or both of you thought so. If all you saw was the fulfillment of your own interest, you missed the beautiful sense of joint interest that made the moment possible in the first place.

We expect and assume that those who serve us and those whom we serve in our daily transactions will deliver the grande, half-caff, Ethiopian medium roast, room-for-milk, drip coffee as we ordered it. We expect and assume that the Clorox Green Works laundry detergent that we buy at Walmart, no, at the slightly-less Jovian Target, will in fact be 99% biodegradable, to say nothing of it being laundry detergent and not a container of dirt. Modern capitalist life is a beautiful system in which we expect and assume uncountable strangers to participate in mutually satisfactory exchange with uncountable interests in mind. It may not be physical *eros*, or charitable *agape*, or even friendly *philia*, but our daily commerce (1a) is a form of love that nonetheless saturates our lives. If you are not convinced that such commerce is beautiful, nor that you expect nor assume that strangers serve your interests, then you might need to explain your indignation when your grande no-foam green tea latte is not a full 16 oz. or when you learn that Volkswagen intentionally programmed its vehicles to evade emissions control detection. We are outraged when strangers do not jointly serve our interests because our minds direct our attention to a novelty in the New Age of Commerce, the novelty being that a person personally unknown to us has disappointed, deceived, or defrauded us.

Our favorite politicians and cable news hosts rely on the same novelty to

effect socio-economic change. Because so many of our own immediate experiences and life-histories do not include struggling to make ends meet, we take notice of reports that CEOs on their corporate thrones earn 950 times what they pay their minimum wage employees. "Walmart, I curse thee! How dare you oppress your workers? You can afford to pay the $5 billion necessary to pay your one million employees $5/hour more."[13] How do you know what you presume to know? And how much of what you presume to know simply depends on how you feel about Jupiter being unequal, socially classed, and from a different tribe than you? We bind ourselves with a loathsome mask.

By the same token, our favorite politicians and cable news hosts rely on eye-poppingly large numbers for us to take further notice of the increases in health care costs and health insurance premiums that we don't likewise see in energy, food, vehicles, clothing, and well, almost everything except undergraduate education, for which there is a different favorite politician and cable news host ready to draw our attention. Notice that no critic of Obamacare opens his or her discussion with the number of people who wouldn't have health insurance but for Obamacare (16.5 million). Why not start by acknowledging the good intentions of the legislation, that all hope is vain but love? It need not be Obamacare itself, but no outside god, no external order is going to help people get health insurance unless we ourselves become the medium for love.

Coda

> Like Shelley, we believe that we need some kind of vision for
> a better world, a world we can create if we are not bound by a
> malignant spirit.
> Our chains not forged in steal,
> No winged hound of heaven tearing at our heart.
> We, ourselves have enslaved us so.
> The hawk of hate gnaws our beating heart.

The Promethean story in the 21st century is a story for the left, right, and center, a story of possibility *if* we can transcend the divisiveness of our furies, *if* we can see the world beyond the order of a tyrant.

> The Furies of our world fueling our discontent,
> From behind their newsroom desks
> Illuminating images of our world in disarray,

13 Yes, one million employees.

Where blood with gold is bought and sold.
Each picture divides us further
Every word stoking the fire;
As a web of ropes is yanked from all sides
And no one explores the tension,
We all yank harder.

Can commerce (1a) and (2a) be unbound from hatred from the right and from the left? Can we understand *commerce* in the social sense of the definition, realizing that it includes "buying and selling together; exchange"? Can our Condition of Commerce be one of *exchange*, so beautifully linked to *change*, literally, to change away?[14] For how can we change if we remain bound to the rock of recriminations and caustic accusation? With commerce—our social interactions (2a) *and* our exchanges of goods and services (1a)—human beings live both good lives and lives of goodness.

. . . for the humbled authors
Of this not so humble piece,
The marketplace and daily interaction,
Our Commerce is the instrument of choice;
Love, its tuner, perfecting its sound.
Here is where we find hope unbound.

Disagreements inevitable, conflict unavoidable,
But fellow feeling and virtue omnipresent.
Lead not with curses, but with hearts;
Allow the mind to love and admire,
To trust, hope, and endure.

Shelley's our agent
Painting us in brighter light.
Not naïve, but hopeful.
Understanding humanity as a process,
And as a goal.

14 The Greek word for "to exchange," *katallattein*, at one time also meant "to change from enemy into friend" (Hayek 1976, 108).

Exchange goods and goodness exchange;
Let love be our Hercules,
Our work Promethean.
Oh, could it be, even,
McCloskeyan?

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Statistically significant journey: How to grow the economy and keep your hair

Stephen T. Ziliak[1]

Skeptical economists are frequently saying to Deirdre McCloskey and me, "before we join you in rejecting the mechanical *p*-value approach to statistical significance testing you will have to overturn a big result in economics." Skeptics inside of our own field of economics are claiming that Ziliak's and McCloskey's decades-long complaints about misused *p*-values, erroneous applications of Student's *t* and the rest are not worth their attention until a big influential model or economic fact is overturned by our arguments (see some of our replies in, for example, Ziliak and McCloskey 2013, 2004b).

Coming from a bunch of alleged scientists, it's a strange claim to hear. We don't much hear it from other social scientists. Nor from physicists or chemists or even professional statisticians—expert scientists and decision makers who appreciate more or less instantly the fundamental distinction between economic and statistical significance. In any case the economists are wrong. We don't think they're right, for a number of reasons. In science it is typically admitted that if a particular logic is wrong, then something—sometimes a *big* something—about the general argument is wrong. Likewise if the standard of quantitative judgment is wrong, the standardly made inference after Ronald A. Fisher is probably wrong, too (Ziliak 2008).

Take the leading case, the *p*-value. The *p*-value approach to significance testing, combined with a bright line rule of statistical significance such as $p < 0.05$, is

1 Stephen T. Ziliak is Professor of Economics and Faculty Member of the Social Justice Studies Program at Roosevelt University (Chicago) where as a faculty member he also served on the University Board of Trustees. He is also Conjoint Professor of Business and Law, University of Newcastle (Australia); Faculty Affiliate in the Graduate Program of Economics, Colorado State University and Faculty Member of the Angiogenesis Foundation (Cambridge).

indefensible on purely logical grounds beyond the missing economic "oomph" (our word for "magnitudes of economic or other substantive importance"). Besides lack of oomph another reason for doubting the test is that in its conventional formulation, the null hypothesis test procedure measured by a *p*-value, Fisher's test suffers from "the fallacy of the transposed conditional" (Ziliak and McCloskey, 2008, p. 17). The details are in *The Cult of Statistical Significance* but the fallacy comes down to this: the probability of gaining weight, given that you ate a full bag of Beloit turtles, is not the same as the probability of eating a full bag of Beloit turtles, given that you've gained weight. But the false equation—the fallacy of the transposed conditional—is made daily by significance testing economists and other scientists.

Little p-value—
What are you trying to say
of significance?

Besides, our critics exaggerate another fact. From studies of public employment programs to economic and legal scandals involving pain relief pills, Ziliak and McCloskey have overturned results in economics, medicine, pharmacology and other sciences, over and over again. The numerous examples are detailed in *The Cult of Statistical Significance* and in a couple dozen articles and book chapters. Still, the skeptics have a right to their opinion, however extreme.

In reply to the skeptics I would like to highlight two major—one could say "significant"—overturns in law and policy which are, I think you will agree, quite relevant to the theme of our conference on wealth and well-being: One, a 2011 U.S. Supreme Court case (Matrixx Initiatives v. Siracusano et al.) to which we were invited to contribute a technical brief of *amici curiae*; and, two, the 2016 American Statistical Association "Statement on *P*-values and Statistical Significance" which I influenced from behind the scenes in my role as lead author of the historic statement signed by the ASA Board of Directors. As you might imagine, there's a story here.

The Labor Department censors black unemployment rates

These overturns of "statistical significance" were not welcomed by most of our colleagues. In fact, if most had their druthers, these things wouldn't have happened at all, and I wouldn't be here.

My first discovery of the "significance" mistake—and especially of the miss-

ing economics and ethics from statistical tests—came as such things do, unexpectedly, in dealings with a bureaucrat. Many years ago, back in 1988, I received a phone call from a man in Gary, Indiana who was working on an economic development project. I was working at the time as a labor market analyst for the Indiana Department of Workforce Development, where half of my time was to be spent answering requests such as the one from the man in Gary. That's why he contacted me.

My former employer, the Indiana Department of Workforce Development, is the old "Department of Employment and Training Services"—that is, the State of Indiana branch of the federal labor exchange established by the Wagner-Peyser Act of 1933. We are the government agency charged with the task of, among other things, estimating and disseminating state and county level wages, employment, unemployment, future economic growth, that sort of thing.

The man in Gary was searching for estimates of unemployment rates for black youth workers, ages 16 to 21, in Indiana labor markets. That's why he called. Gary, Fort Wayne, Indianapolis and the other Metropolitan Statistical Areas (as they are known) down to Evansville in the southwest part of the state.

It seemed like the kind of request we could easily fill. I told him I'd be right back, and set the phone—a landline phone—down on the desk, with the man still on the line.

I pulled up my Lotus 1-2-3 spreadsheets (hurrah! Those were the good ole days) and couldn't find the data. I asked my boss and he couldn't find the data. We asked his boss and he couldn't find them. Finally we contacted the boss's boss's boss, that is, the head of labor market information for the U.S. Department of Labor, Chicago region.

For about an hour we waited in anxious curiosity. I remember the chit chat, the hand-rubbing, the pacing back and forth. "Isn't it strange," we said again and again, "that we can't find these unemployment rates?" Then the intranet email arrived, such as it was the mid and late 80s: blurry green and white blinking characters, almost at times resembling English. Reading email on line in the 1980s was like trying to read a book while playing a game of flashlight tag.

As part of the federal labor exchange, the Indiana Department of Workforce Development is overseen by the U.S. Department of Labor, which sets policy—including data dissemination and publication policy.

The Department of Labor policy was: do not distribute estimates of unemployment rates if estimates are "not statistically significant at the 0.10 level ($p < 0.10$)".

Understand: we had the data. We had the estimates. The employment office for the State of Indiana had estimates for the unemployment rates of black youth for all labor market areas. But we weren't allowed to release them. Not "significant". Not "statistically significant", they mean.

But statistical significance is not the same as economic significance. Statistical significance is not the same as economic or ethical or social justice significance.

Who would be surprised if the unemployment rate in some areas exceeded 40 or 50%? Nowadays, in some census tracts, how about 90%?

The upshot: black youth unemployment was hardly discussed in Indiana in the 1980s. Why? One big reason is because the unemployment rates were not entered into the public record!

Later that day I was embarrassed to return the Gary man's phone call to explain the official if terribly uncomfortable news.

I didn't know a fraction then of what I know now. (I had been alerted to the confusion of statistical with economic or other substantive significance by a single paragraph I had found in an introductory textbook by Wonnacott and Wonnacott [1982, p. 160].) But my moral outrage was greater than my scientific confusion, and I committed then and there to continue to study and fight against the illogical and dangerous policy of making decisions based on a bright-line rule of statistical significance. Bad decisions such as "do not discuss black unemployment".

Statistical fit—
Epistemological
strangling of wit!

Iowa professors and a "significant" article

Around that time I stumbled upon a little book called *The Rhetoric of Economics* (1985), by Donald N. McCloskey.

I was amazed to find there a chapter by an economist making some of the same points—and some different ones as well—about the censorious ritual of significance testing I had experienced at the Labor Department.

Turns out I was looking to join a good PhD program that could handle at least a little bit of this. McCloskey was a leading economic historian and philosopher and, despite our quite different politics, I took the bait: in the summer of 1991 my little family and I packed up and moved to Iowa. (At the time I was

not 100% sure where the state of Iowa is located. On the map I recall confusing it with Missouri.)

By '93 I had worked out a first draft of a controversial paper with McCloskey and in '95 our paper, called "The Standard Error of Regressions", was accepted for publication in—we could hardly believe it at the time—the *Journal of Economic Literature.*

The "J.E.L." is a blue ribbon journal, and our paper, overturning status quo beliefs about statistical significance, was going to be printed in it! As the official reference journal for the American Economic Association, the *JEL* is read and cited by economists all over the world. I, a graduate student, was understandably stoked. Ever since that phone call about black unemployment rates, back in '88, I wanted badly to do something more, and now I had.

Trouble is, not everyone was stoked. Not everyone was happy or impressed. In truth, that article earned me a lot of enemies in the academy, some of whom, twenty five years later, still hold a grudge.

In the autumn of 1995 the Iowa economics faculty organized a generous program to assist soon-to-be graduates and academic job-seekers such as me. The program was to simulate a 30 minute long job interview as typically conducted by economics faculty.

Understandably they wished to help us obtain our immediate and urgent dream, which for most of us was to get a job as an assistant professor of economics at a major university or good college. So two or three faculty members sat in a room across a table where the rising PhD and job candidate sat.

I was fortunate to be interviewed by two of the better professors, and to this day I am grateful for the tips they provided. But our meeting that day ended on a heated note.

During the question and review period at the end of the mock interview, one of the professors—an editor of *Econometrica*—suggested I remove "The Standard Error of Regressions" article from my CV.

"Why?" I asked. The other professor piped up, and answered: "It's too controversial, you won't get a job." The editor of *Econometrica* repeated, "It's too controversial for an assistant professor. It's for your own good."

Incensed, but also highly amused, I asked them: "If you had a *JEL* article, would you take it off of your CV?" (Answer: oh hell no!)

As I was walking back to my office in Brewery Square (yes, that's what it's called: on Linn Street, Iowa City) I realized I was in fact running. I ran as fast as I

could back to my office, opened up the Word Perfect file containing my CV, and started rearranging.

In the version of the CV I gave to the Iowa professors, my "Work Experience" was listed at the top of the CV and "Publications" at the bottom. (I had two publications when I graduated. At the time that was two pubs above the norm among economics grad students.)

Instead of removing "The Standard Error of Regressions" I inverted the arrangement of my CV so that the article appeared on top! For my own good.

The Iowa professors were well-intentioned but wrong. In the event, I was invited for eleven job interviews at ten excellent schools and one branch of the Federal Reserve Bank (Dallas). In a cohort of seven rising graduates from Iowa's economics PhD program, I was the first one to land a job.

The Iowa professors were in addition not the only people wondering if I was going to cut my hair before hitting the job market. My family wondered, too. One aunt went so far as to ask, "when are you going to cut that crap?" I replied, "My advisor has just changed gender in full public view. And you're worried about my hair?" I had spent many years cultivating my own version of the bohemian-philosopher look. I had no passion for the bourgeoisie and couldn't see the point of conforming to their fashion, either. I told Deirdre, the philosopher of bourgeois virtue, around that same time: "Thank you for that—I've got it made now!" And I still have my hair, that which hasn't fallen out.

Welcome, but two little things you shouldn't mention

In grad school my main field of study was economic history. And I am proud to say that in February 1996 I was offered and I accepted the one and only position in economic history which was advertised by our professional job magazine, "Job Openings for Economists" or "JOE" as it's known.

Though I got a big lump in my throat when I saw the "downtown" of the tiny Midwestern city where I would eventually work and live—at mid-day the parking lot of the Big Boy restaurant was jam packed—the job fit seemed promising. I could overlook the quality of the restaurants. But again, I met a major—one could say again, "significant"—stumbling block or choke hold if you will.

Soon after I arrived on the job my several new friends, the colleagues who recruited me, sat me down for a talk about department politics and how I should behave in the classroom and in my research leading up to tenure.

The upshot? "Don't mention rhetoric, that isn't respected by half of the tenured faculty. [In addition to the PhD in Economics I earned at Iowa a PhD Certificate in the Rhetoric of the Human Sciences, a program co-founded by Deirdre.) "And whatever you do," they said to me, the author of the *JEL* article, "don't mention your complaints about statistical significance. The faculty won't like it. You won't get tenure."

And that was coming from my friends! Just looking out, I know. Just like the Iowa professors.

After three mixed years—what do you expect to happen when you cut two of the major strings in the bow?—I was happy to get out and go elsewhere. Turns out, neither were the Georgia Tech professors ready for the long haired statistician (the students were and are).

Statistical significance stinks, says the U.S. Supreme Court

Since our first large-scale survey of best practice significance testing in economics, covering the 1980s in the *American Economic Review*, the significance mistake has gotten worse, not better. That is what we showed in "Size Matters" and again in *The Cult of Statistical Significance* (Ziliak and McCloskey 2004a, 2008). Eight or nine of every ten articles published in the leading journals of science are making the significance mistake.

Fortunately a new rule of law, handed down in 2011 by the Supreme Court of the United States, ought to help (Supreme Court of the United States, 2011a). In Matrixx Initiatives v. Siracusano et al. (2011) the high court ruled that companies can no longer conceal from investors relevantly bad news about their products by claiming that the adverse effects are not "statistically" significant at the 0.05 or any other level (note: this section borrows heavily from Ziliak and McCloskey, 2016).

Companies must consider the human meaning of the consequences, not merely the estimated probability, of biomedical results. Statistical significance without a loss function is no longer the rule of securities law. Substance, magnitude, oomph, risk of loss, is. On March 22, 2011, in *Matrixx Initiatives, Inc. v. Siracusano*, No. 09-1156, the Supreme Court rejected Fisher's rule by a 9–0 vote.

The case involved a homeopathic medicine called Zicam, a zinc-based cold remedy produced by Matrixx Initiatives. When swabbed or sprayed in the nose, the drug is expected to reduce incipient colds. But it also causes some users to lose

permanently their sense of smell (and thus of taste), a condition called *anosmia*. The loss function here is a function, then, of a high probability of stopping a cold balanced against a low probability of losing all taste of food and not smelling the flowers or your lover ever again.

(Incidentally, the econometrician Bob Elder of Beloit College has made a persuasive case in these *Proceedings* that the *F*-statistic, when derived from a loss function, can itself be used as a loss function for comparing losses. The *F*-test, he claims, does not have to be seen as a simple multi-variate *t*-test subject to the same old "sizeless stare of statistical significance" (Ziliak and McCloskey 2008, 2004a). In haiku form, Elder writes:

The F-statistic
is simply a loss function
for comparing losses.

Elder agrees with the empirical finding of our large scale survey, however, showing that more than 90% of all *F*-tests are computed without a loss function.)

When a doctor appeared on the *Good Morning America* television show in 2004 explaining the dangers of zinc-based treatments, Matrixx stock price plummeted. The company replied, though, that the adverse effect reports were not statistically significant. The company assured investors that revenue from Zicam, a hundred million dollar a year seller, was expected to grow vastly—by "50 and then 80 percent" (Supreme Court, 2011*b*: p. 3).

In the January 10, 2011, oral arguments before the Supreme Court, Justice Sotomayor chastised counsel for the petitioners (petitioning, that is, to have an appeals-court ruling against Matrixx reversed [Supreme Court, 2011*a*]).

"Mr. Hacker" was chastised for neglecting to respond to technical briefs on the subject that had been authored and filed by *amici* of the court. Many of the friends of the court, the Justice said, "did a wonderful job." (Full disclosure: we were two of the *amici* [McCloskey and Ziliak, 2010]. As is common in such matters, though, the "wonderful job" was mostly done by Allan Ingraham, an economist who drafted the brief for a New York law firm on the basis of our writings.)

Investors in Matrixx stock had filed suit against the company in a federal district court. They told the court that the company had failed to disclose the bad news it had received from expert nose doctors. But the district court dismissed the suit on the basis that investors did not prove "materiality," which meant, un-

der then-existing precedents, statistical significance. Statistical significance had long since become part of securities law: if it is statistically "insignificant" then, however illogical, it is materially insignificant, too. The Court of Appeals for the Ninth Circuit then reversed the district court's decision, reasoning in a narrow fashion "that whether facts are statistically significant, and thus [under the then-existing rule of law] material, is a question of fact that should ordinarily be left to the trier of fact—usually the jury."

The Justices went deeper. They disagreed with the definition of materiality invoked by the district court in the first place. The Justices said that the district court "erred when it took liberties in making that determination on its own."

"Something more is needed," Justice Sotomayor wrote for the unanimous Court, and the something, she said, should address the "source, content, and context" of the bad news. *Matrixx v. Siracusano* presented the Court with the question whether plaintiffs can sustain a claim of securities fraud against a company neglecting to warn investors about bad news that is *not* statistically significant. Nine to zero it ruled that they can.

The Court is not well known for economic or statistical sophistication. But, in this case, it got it right. The precedent, now the law of the land, should be followed, we believe, for all statistical reporting, nine to zero, from climate change research to randomized field experiments in developing nations. In other words, loss functions matter. Oomph is what we seek. And oomph, not the level of Student's t, is the new rule of law.

"Student" himself, by the way, that is William Sealy Gosset (1876-1937), must be dancing in his grave. Student's day job was running experiments on Guinness beer and the inputs to the beer. Student was a pen name which the publishing Mr. Gosset used to protect the brewery's proprietary rights. He rose to Head Brewer of the-then largest brewery in the world, persuading the Guinness Board with his experimental economic approach to the logic of uncertainty. As I've shown in archival work at the Guinness Archives and elsewhere, the inventor of Student's t did not put much weight on statistical significance!

What a reasonable investor might say

The Court examined the expectations of a "reasonable investor." Would undisclosed bad news be likely to negatively affect the "total mix" of information considered by a reasonable investor? If yes, then the report must be disclosed,

regardless of statistical significance or insignificance. Sotomayor wrote for the Court (Supreme Court of the United States, 2011a),

medical professionals and researchers do not limit the data they consider to the results of randomized clinical trials or to statistically significant evidence [unhappily the movement for "evidence-based medicine" may falsify her claim]…. The FDA similarly does not limit the evidence it considers for purposes of assessing causation and taking regulatory action to statistically significant data. In assessing the safety

risk posed by a product, the FDA considers factors such as "strength of the association," "temporal relationship of product use and the event," "consistency of findings across available data sources," "evidence of a dose-response for the effect," "biologic plausibility," "seriousness of the event relative to the disease being treated," "potential to mitigate the risk in the population," "feasibility of further study using observational or controlled clinical study designs," and "degree of benefit the product provides, including availability of other therapies."… [The FDA] does not apply any single metric for determining when additional inquiry or action is necessary.

To the theory of the attorneys for Matrixx that statistical significance set the standard for disclosure, over and above "background noise," Justice Breyer (Supreme Court, 2011*a*: 22) replied to a Mr. Hacker, "Oh, no, it can't be. I mean, all right—I'm sorry. I don't mean to take a position yet." [Laughter.]

JUSTICE BREYER. But, look—I mean, Albert Einstein had the theory of relativity without any empirical evidence, okay? So we could get the greatest doctor in the world, and he has dozens of theories, and the theories are very sound, and all that fits in here is an allegation he now has learned that it's the free zinc ion that counts.

MR. HACKER. But….

JUSTICE BREYER. And that could be devastating to a drug even though there isn't one person yet who has been hurt.

To Hacker's argument that statistical "significance" is the way to truth and justice in biomedical suits and cases of securities fraud, Breyer snorted, "This statistical significance always works and always doesn't work." In the same session, Sotomayor (citing *amici*) said that what counts as "statistical importance can't be a measure because it depends on the nature of the study." Justices Kagan and Ginsberg argued that small numbers of humanly meaningfully large effects can be materially relevant, independent of the level of statistical signif-

icance. Thus, the loss function. Loss of smell is bad enough, but suppose (a small number of) people died? Kagan referred to a situation in which a small number of instances of blindness were known to be associated with the use of a contact lens solution. The FDA, she noted, would not wait around for statistical significance to make a determination or to investigate further into the facts of such black swans.

Chief Justice Roberts sympathized with the test of expectations of a "reasonable investor," concluding that statistical significance was not necessary for establishing causation or belief in association. Sotomayor, in the Court's decision again (Supreme Court, 2011*b*: 1–2, 11): "We conclude that the materiality of adverse event reports cannot be reduced to a bright-line rule. Although in many cases reasonable investors would not consider reports of adverse events to be material information, respondents have alleged facts plausibly suggesting that reasonable investors would have viewed these particular reports as material…. Matrixx's argument rests on the premise that statistical significance is the only reliable indication of causation. This premise is flawed."

Statistical Significance is not material oomph

The *Matrixx* decision is consistent with the high court's prior rejection of a bright-line rule in a fact-finding and economically important situation. Citing *Basic v. Levinson* (1976), a case involving a bright-line definition for what is meant by "merger negotiations," Justice Sotomayor argued (Supreme Court, 2011*b*) that "we observed [in Basic] that 'any approach that designates a single fact or occurrence as always determinative of an inherently fact specific finding such as materiality, must necessarily be overinclusive or underinclusive.'"

Consider a pill that is thought to be effective at relieving pain but at the cost of an increased risk of heart attack. Suppose a well-designed experiment is conducted on a sample of adult humans: half taking the drug, the other half taking another and competing drug. The significance tester—in search of a single, determinative fact—then poses the question: "Assuming there is no real difference between the two pills, what is the chance that the data—showing some amount of difference—will be observed?" If the chance of seeing a difference in adverse effect larger than the one observed is less than or equal to 5 percent, it is declared to be statistically significantly different from the null hypothesis of "no difference"—without saying how much that difference is or how one should view

it. But it is an ethically flawed procedure, and before the Justices spoke it was accepted by American law.

In the early 2000s, around the time that Matrixx and Zicam were getting into trouble, a much larger producer, Merck, a pharmaceutical company, got into billions of dollars of trouble with their Vioxx pill. Vioxx-takers began to die from heart disease and heart attacks. In a clinical trial, the Merck scientists reported that Vioxx takers risk a big adverse effect—death. Yet the *p*-value came in at 0.20, meaning that a 4:1 or higher odds of experiencing a major

cost (such as death) is not worthy of policy consideration because it is not "statistically" significant at $p = .05$, or higher than 19:1 odds (see Ziliak and McCloskey, 2008, chapter 3). Therefore the company neglected the adverse outcomes. Therefore they committed the error of under-inclusiveness, a deathblow to science and lives, an error caused by unnecessary adherence to a bright-line rule of statistical significance.

Something more is needed

What the Supreme Court did not say is that the test of significance gives us the *wrong* information, period. The test gives a probability of finding a larger difference than that observed in the sample on offer, assuming that treatment and control drugs are actually the same. But that is "the fallacy of the transposed conditional" (Ziliak and McCloskey, 2008, chapters 13-16). What we really want to know is the probability of a hypothesis being true (or at least practically useful), given all the data we've got—not the other way around. We want to know the probability that the two drugs are *different* and by how much, given the available evidence. The significance test—based as it is on Fisher's fallacy of the transposed conditional—does not and cannot tell us that probability. The power function, the expected loss function, and many other decision-theoretic and Bayesian methods descending from William S. Gosset aka "Student", Harold Jeffreys, and others, now widely available, do.

A "significant" result does not in any way answer the How Much question, the question of how much or how valuable the difference in magnitude is (such as loss of smell or sight, or relief from pain, or nipping a cold in the bud). The significant result cannot demonstrate economic, medical, or any other importance for the obvious reason that it does not address it. In other words, we want to know the probability of detecting a *large and practically important difference* when

the difference is truthfully there. We need exploratory methods, a power function, an expected loss function, and, ideally speaking, a series of independently repeated experiments controlling for random and real error.

On writing the ASA Statement on Statistical Significance and P-Values

By autumn 2014 the complaints about statistical significance and its role in the crisis of reproducibility (sometimes called the "crisis of replication") had bubbled up to the top of the American Statistical Association.

With more than 19,000 members and growing, the ASA is the largest, most influential professional association of statisticians in the world. Past presidents and officers of the ASA include some of the world's most influential scientists, representing fields from economics and agriculture to physics and biology.

A number of past presidents of the ASA had spoken out against mindless significance testing, some of them while still in office. Wallis, Kruskal, Zellner and quite a few others up to and including David Morganstein and Jessica Utts, who presided over the ASA in 2015 and 2016. But compared to artists and English professors, statisticians as a group tend to fall on the conservative side of the policy activism/I'm-going-to-tell-you-what-to- do spectrum. And prior to 2015 the [second] oldest national level professional association in the country (established in 1839) had never taken a policy position on "methods," not once we believe.

So I was understandably delighted when I was tapped by Executive Director Ron Wasserstein to join a platinum team of experts, charged with making a statement about *what statistical significance, Student's t, and Fisher's p cannot do, what tests of significance do not mean and don't imply.*

The list of names on the team of around two dozen reads like a 20th and 21st Century Statistical Hall of Fame: Don Rubin, Rod Little, Don Berry, Ken Rothman, Andrew Gelman, Val Johnson, Sander Greenland, Stephen Senn, Brad Carlin, and others. Twenty four, I believe, in total. We met in person in Alexandria, VA, at ASA headquarters, on two unseasonably cold days in the middle of October 2015.

Twenty years after the Iowa professors and my first academic job, I was— though a Full Professor— a bit anxious (as was Ron Wasserstein) about the meeting. The world class statisticians would be examining line by line a draft statement and supplementary working paper drafted by me mainly, with light editing

by Ron Wasserstein and several other committee members.

There was no public hanging. On the contrary. Though the conversation grew heated on a number of points after two days our committee was able to emerge with near consensus on at least six principles related to statistical significance testing. The outcome of our work, spanning nearly a whole year, is the "ASA Statement on Statistical Significance and *P*-Values" that is now world famous, or as close to famous as such things ever get.

Here are excerpts from the Statement which was approved and signed in March 2016 by the ASA Board of Directors:

"ASA Statement on Statistical Significance and *P*-values

Introduction

. . . The validity of scientific conclusions, including their reproducibility, depends on more than the statistical methods themselves. Appropriately chosen techniques, properly conducted analyses and correct interpretation of statistical results also play a key role in ensuring that conclusions are sound and that uncertainty surrounding them is represented properly.

Underpinning many published scientific conclusions is the concept of "statistical significance," typically assessed with an index called the *p*-value. While the *p*-value can be a useful statistical measure, it is commonly misused and misinterpreted. This has led to some scientific journals discouraging the use of *p*-values, and some scientists and statisticians recommending their abandonment, with some arguments essentially unchanged since *p*-values were first introduced.

In this context, the American Statistical Association (ASA) believes that the scientific community could benefit from a formal statement clarifying several widely agreed upon principles underlying the proper use and interpretation of the *p*-value. The issues touched on here affect not only research, but research funding, journal practices, career advancement, scientific education, public policy, journalism, and law. This statement does not seek to resolve all the issues relating to sound statistical practice, nor to settle foundational controversies. Rather, the statement articulates in non-technical terms a few select principles that could improve the conduct or interpretation of quantitative science, according to widespread consensus in the statistical community.

What is a *p*-value?

Informally, a *p*-value is the probability under a specified statistical model that a statistical summary of the data (for example, the sample mean difference between two compared groups) would be equal to or more extreme than its observed value.

Principles

1. *P-values can indicate how incompatible the data are with a specified statistical model.*

A *p*-value provides one approach to summarizing the incompatibility between a particular set of data and a proposed model for the data. The most common context is a model, constructed under a set of assumptions, together with a so-called "null hypothesis." Often the null hypothesis postulates the absence of an effect, such as no difference between two groups, or the absence of a relationship between a factor and an outcome. The smaller the *p*-value, the greater the statistical incompatibility of the data with the null hypothesis, if the underlying assumptions used to calculate the *p*-value hold. This incompatibility can be interpreted as casting doubt on or providing evidence against the null hypothesis or the underlying assumptions.

2. *P-values do not measure the probability that the studied hypothesis is true, or the probability that the data were produced by random chance alone.*

Researchers often wish to turn a *p*-value into a statement about the truth of a null hypothesis, or about the probability that random chance produced the observed data. The *p*-value is neither. It is a statement about data in relation to a specified hypothetical explanation, and is not a statement about the explanation itself.

3. *Scientific conclusions and business or policy decisions should not be based only on whether a p-value passes a specific threshold.*

Practices that reduce data analysis or scientific inference to mechanical "bright-line" rules (such as "$p < 0.05$") for justifying scientific claims or conclusions can lead to erroneous beliefs and poor decision-making. A conclusion does not immediately become "true" on one side of the divide and "false" on the other. Researchers should bring many contextual factors into play to derive scientific inferences, including the design of a study, the quality of the measurements, the external evidence for the phenomenon under study, and the validity of assumptions that underlie the data analysis. Pragmatic considerations often require binary, "yes-no" decisions, but this does not mean that *p*-values alone can ensure that a decision is correct or incorrect. The widespread use of "statistical significance" (generally interpreted as "$p \leq 0.05$") as a license for making a claim of a scientific finding (or implied truth) leads to considerable distortion of the scientific process.

4. *Proper inference requires full reporting and transparency*

P-values and related analyses should not be reported selectively. Conduct-

ing multiple analyses of the data and reporting only those with certain *p*-values (typically those passing a significance threshold) renders the reported *p*-values essentially uninterpretable. Cherry-picking promising findings, also known by such terms as data dredging, significance chasing, significance questing, selective inference and "p-hacking," leads to a spurious excess of statistically significant results in the published literature and should be vigorously avoided. One need not formally carry out multiple statistical tests for this problem to arise: Whenever a researcher chooses what to present based on statistical results, valid interpretation of those results is severely compromised if the reader is not informed of the choice and its basis. Researchers should disclose the number of hypotheses explored during the study, all data collection decisions, all statistical analyses conducted and all *p*-values computed. Valid scientific conclusions cannot be drawn without at least knowing how many and which analyses were conducted, and how those analyses (including *p*-values) were selected for reporting.

5. *A p-value, or statistical significance, does not measure the size of an effect or the importance of a result.*

Statistical significance is not equivalent to scientific, human, or economic significance. Smaller *p*-values do not necessarily imply the presence of larger or more important effects, and larger *p*-values do not imply a lack of importance or even lack of effect. Any effect, no matter how tiny, can produce a small *p*-value if the sample size or measurement precision is high enough, and large effects may produce unimpressive *p*-values if the sample size is small or measurements are imprecise. Similarly, identical estimated effects will have different *p*-values if the precision of the estimates differs.

6. *By itself, a p-value does not provide a good measure of evidence regarding a model or hypothesis.*

Researchers should recognize that a *p*-value without context or other evidence provides limited information. For example, a *p*-value near 0.05 taken by itself offers only weak evidence against the null hypothesis. Likewise, a relatively large *p*-value does not imply evidence in favor of the null hypothesis; many other hypotheses may be equally or more consistent with the observed data. For these reasons, data analysis should not end with the calculation of a *p*-value when other approaches are appropriate and feasible.

Other approaches

In view of the prevalent misuses of and misconceptions concerning *p*-values, some statisticians prefer to supplement or even replace *p*-values with other ap-

proaches. These include methods that emphasize estimation over testing, such as confidence, credibility, or prediction intervals; Bayesian methods; alternative measures of evidence, such as likelihood ratios or Bayes Factors; and other approaches such as decision-theoretic modeling and false discovery rates. All of these measures and approaches rely on assumptions, but they more directly address the size of an effect and its associated uncertainty, or the likelihood that a hypothesis is true. "

You get the idea. The leading statisticians of the leading statistical association have now said in public that they agree with us. The ASA agrees. The Supreme Court of the United States, agrees. And before them, several Nobel laureates and other leading lights of econometrics, from Clive Granger and Graham Elliott to Arnold Zellner, Edward Leamer, Joel Horowitz (formerly of Iowa!) and Jeffrey Wooldridge said in print and in public at a big plenary on our work at the 2004 American Economic Association meetings: yes, we agree. We agree, the eminent theorists told an assembly of 350 economists and journalists, that (1) economic significance is not the same thing as statistical significance, and (2) most economists devote too much attention to statistical significance and not enough to economic significance (Ziliak and McCloskey 2004b; The Economist, 2004; see also Schelling 2004).

Twenty years ago, even twelve years ago, it was culturally speaking quite easy to ignore the arguments and facts against the significance mistake. Most, including most economists at the Department of Labor, did.

You'd be surprised how many smart people still Don't Get It. Steve Levitt of *Freakonomics* fame, and co-author John List, for example: clueless (Ziliak 2014). It will be interesting to see how earlier critics—the last defenders of the old status quo—Kevin Hoover, Aris Spanos, Deborah Mayo and others—reply to the new rule of law and ASA Statement. If history is any guide, probably with more defensive if erroneous arguments.

Health economists reject bright-line rules of significance

Or perhaps they will do as the health economists have done and collectively join together to reject erroneous uses of statistical significance and insignificance. In May 2015, almost a full year before publication of the ASA Statement, the editors and editorial boards of eight different journals of health economics banded together to publish the following statement, influenced by (we've been told by one of the editors) the Ziliak-McCloskey research:

"EDITORIAL STATEMENT ON NEGATIVE FINDINGS

The Editors of the health economics journals named below believe that well-designed, well-executed empirical studies that address interesting and important problems in health economics, utilize appropriate data in a sound and creative manner, and deploy innovative conceptual and methodological approaches compatible with each journal's distinctive emphasis and scope have potential scientific and publication merit regardless of whether such studies' empirical findings do or do not reject null hypotheses that may be specified. As such, the Editors wish to articulate clearly that the submission to our journals of studies that meet these standards is encouraged.

We believe that publication of such studies provides properly balanced perspectives on the empirical issues at hand. Moreover, we believe that this should reduce the incentives to engage in two forms of behavior that we feel ought to be discouraged in the spirit of scientific advancement:

1. Authors withholding from submission such studies that are otherwise meritorious but whose main empirical findings are highly likely "negative" (e.g., null hypotheses not rejected).

2. Authors engaging in "data mining," "specification searching," and other such empirical strategies with the goal of producing results that are ostensibly "positive" (e.g., null hypotheses reported as rejected).

Henceforth, we will remind our referees of this editorial philosophy at the time they are invited to review papers. As always, the ultimate responsibility for acceptance or rejection of a submission rests with each journal's Editors.

[Signed, THE EDITORS of] American Journal of Health Economics; European Journal of Health Economics; Forum for Health Economics & Policy; Health Economics Policy and Law; Health Economics Review; Health Economics; International Journal of Health Economics and Management; Journal of Health Economics"

Statistical significance is a type of scientific misconduct

The job is not complete. Practice has not changed (Ziliak and Teather-Posadas 2016). The revolution has not been televised. The next essential step or "overturn" at the national level is in my view to officially regulate and penalize deliberate misuse of statistical significance. The slower journals might wait for threats

of real loss, money and ranking. Why they'd wait is anyone's guess. Perhaps they need to feel for themselves that misuse of statistical significance is costly to science and lives. As a nation and community of ethical scientists we have to call it and penalize it for what it is: a species of scientific misconduct.

For starters, impact factors ought to be supplemented by—or even partially computed by—a numerical scale of substantive, scientific significance. A scale which penalizes the journal and article for misuse of statistical significance and rewards them for calculations of economic or other substantive significance, drawn along the lines of our surveys and principles. Today an "A"-list journal can remain A-list, despite earning an "F" grade in statistical significance. Some scale!

In a special issue on ethics and economics published in the *Review of Social Economy,* I noted that several of the major institutions for the advancement of science in the United States—from the National Institutes of Health and National Science Foundation to the American Association for the Advancement of Science itself—have sought to define and to enforce national standards for research integrity and ethical scientific conduct (Ziliak 2016). Statistical significance is not on their list of standards. Fabrication or falsification of data, deceitful manipulation, and plagiarism, I observed, are the most commonly cited forms of misconduct named and pursued. Although gross misuse of statistical significance has led to approval of faulty medical therapies which cause harm to real people—and, in some cases, such as the Vioxx debacle, even death—the scientific community has not added misuse of statistical significance to the list of scientific misconduct.

Yet researchers engaged in similar types of manipulation or questionable research practices have been penalized by those same agencies. For example, a University of Oregon researcher was recently penalized by the U.S. Department of Health and Human Services for publishing "knowingly falsified data by removing outlier values or replacing outliers with mean values to produce results that conform to predictions" (Office of Research Integrity 2015).

Misuse of statistical significance fabricates results in a similar manner and not only by dropping "insignificant" adverse results in the high-pressure drug industry. The significance mistake is undesirable, inefficient, and, in most cases—philosophers agree—unethical (see Ziliak and Teather-Posadas [2016] for theoretical discussion of ethics in empirical economics including drugs and field experiments in development economics). But the significance mistake seems to be outside the bounds of the current definition of scientific misconduct used by government agencies, research universities, and—with the extraordinary excep-

tion of the Matrixx v. Siracusano case decided by the U.S. Supreme Court—the legal process when such matters get litigated in a court of law. If we are going to stem and finally stop altogether the widespread misuse of statistical significance, we must begin to get the incentives right and in more than improved publication style and journal editorial policy.

Whatever my critics decide, I doubt I'll cut my hair.

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Story Craft and the Market Process

Emily Chamlee-Wright[1]

1. Taking Stories Seriously

We are all storytellers and we are the stories we tell.

—McAdams, Josselson, and Lieblich, *Identity and Story: Creating Self in Narrative*, 2006, p. 3.

In her path-breaking work *Bourgeois Virtues*, Deirdre McCloskey (2006) argues that markets depend upon, and in turn enhance, a variety of virtues beyond the "prudence-only" explanations economists ordinarily attribute to markets. The 16-fold improvement in wealth and well-being the world has experienced since the dawn of the Industrial Revolution, McCloskey argues, depends crucially on the virtues of love, hope, faith, courage, temperance, and justice. In turn, she argues, market engagement improves and hones these virtues. In *Bourgeois Dignity,* McCloskey (2010) argues that liberty and a shift in ideas attributing dignity to merchant, and later, manufacturing behavior were the principal sources of the growth that shaped the modern world and enriched its inhabitants. According to McCloskey (ibid.: 371), "It is not science that was the key to the door to modernity, but the wider agreement to permit and honor innovation, opening one's eyes to novelty, having a go." As McCloskey (ibid., 372) argues, the narrative worked its magic from within as well as from without, leading to a new bourgeois economic identity of self. "The new bourgeois society was pragmatic and nonutopian, but also a little mad—the madness that overcame European men and women

1 Emily Chamlee-Wright is President of the Institute for Humane Studies at George Mason University. She was previously Elbert H. Neese, Jr. Professor of Economics and associate dean at Beloit College.

once they came to believe that they were free and dignified and should have a go."

In short, ideas, and the talk that conveys ideas about liberty, talk that reinforces values that support the market order, and talk that assigns dignity to commercial enterprise are the driving forces behind prosperity. In her account of the "hockey stick" of growth and human betterment that occurs with the Industrial Revolution, she offers her readers a case-study—an ambitious case study to be sure—in which talk, a particular sort of narrative, transformed the political, social, and economic landscape.[2] McCloskey's analysis points to the possibility that narrative is fundamental to economic processes, not just in the case of the "bourgeois revaluation," but in all economic processes and outcomes. In this essay I take the opportunity to explore this possibility—that narrative is not an add-on to economics; not an add-on to understanding how markets play out in the world—but is instead, fundamental to the market process.

As McCloskey observes in *Bourgeois Virtues*, *Bourgeois Dignity* and *Bourgeois Equality,* scholarly narratives matter. It matters that Bernard Mandeville (1732 [1988]) had already argued that it is "private vices," i.e., self-regarding actions, that drive "public virtues" of commercial and social progress. It matters that by 1739 David Hume's *Treatise of Human Nature* had established a practical defense of private property. And by the late 18th century, Adam Smith (1776 [1976]: 15) was inviting us to marvel at the market, to marvel at the international scope of productivity and wealth creation, to marvel at the process that brings about a woolen coat at modest expense. Smith had also invited us to marvel at a process that is guided *as if* by an invisible hand, but amazingly, not really intentionally guided at all (ibid: 477). And he no doubt drew the attention of his readers to what might have otherwise been taken for granted. With that said, it is worth noting that he drew upon examples that must have seemed commonplace to his readers. Readers of Smith's time were likely nodding their heads in affirmation, as he articulated in erudite prose what they had already glimpsed. Scholarly narratives are important, but they tend to have the greatest sticking power when they

2 McCloskey's work on the bourgeois virtues connects closely with her work on rhetoric and persuasion. In *The Rhetoric of Economics*, McCloskey (1985 [1998]) describes the rhetorical styles of the economics discipline, arguing that the way we talk about economics shapes what we consider persuasive and what we count as "real" economics. Similarly, in *If You're So Smart: The Narrative of Economic Expertise*, McCloskey (1992) argues that storytelling is essential to economic argumentation, not only because of the plot twists and surprise endings that lessons of unintended consequences introduce, but that it is the rhetorical narrative that *carries* the argument. Choose the metaphor, and you have chosen the argument. See also *Knowledge and Persuasion in Economics* (McCloskey 1994).

tell us something about ourselves that we have already half-figured out on our own; when they systematize what folk-wisdom has already taught us to be true.

Scholarly narrative, however, is but one kind of talk.[3] For the purposes of this essay, I focus on storytelling talk. At one level, all talk is storytelling. As McCloskey (1985 [1998]) argues, the scholar, if she is to persuade her readers, has to tell a plausible story. If the scholarly story works, the world has been rendered a bit more intelligible by the telling. But as stories go, most scholarly stories are fairly flat. At least most economic stories tend to be so. As McCloskey (2006, 2008, 2010, 2016) points out, the "characters" of mainstream economic stories tend to be like Max-U, a prudence-maximizing machine. To the extent that love and hope show up at all, it is in the form of new arguments in the objective function.

The stories of our daily lives, however, are far more interesting. The stories that inform our daily life have real characters who are heroic, imperfect, larger-than-life, complicated, inspiring, and flawed. And the virtues exhibited in the characters and plot lines of our daily stories come in complicated bundles that include, among others, McCloskey's bourgeois virtues in varying degrees. In this essay, I seek to take stories and storytelling seriously for the roles they play in driving economic activity and outcomes. By stories and storytelling, I mean all manner of stories that we commonly associate with the terms: the grand stories of great literature and stage, popular stories of movies, television, YouTube channels, and fan fiction, and the stories we spin about ourselves day-to-day—the roles and characters we play and the plots we sketch out in order to make sense of our personal and professional lives.

Below I discuss the story-like dimensions of classical political economy, in particular, Smith's concept of the "impartial spectator." Drawing on research conducted in a post-disaster environment, I then explore a context in which bourgeois heroes emerged—bourgeois characters who did more than (merely) exhibit virtue. They leveraged their bourgeois identity to "save the day." I also explore less dramatic economic contexts in which the stories we tell to ourselves and to one another—stories about who we are, the meanings of the small dramas in which we are cast—direct our actions as players in the market, from economic survivor, to entrepreneur, to organizational leader.

3 Martin and Storr (2012) have also expanded on the role of talk among social entrepreneurs, specifically, abolishionists in the United States before the Civil War. The authors frame their argument as a further exploration of McCloskey's (2010) claim that changes in rhetoric precede social change.

2. Smith's Impartial Spectator as Storytelling

Lieutenant "Bunk" Moreland: A man must have a code.
Omar Little: Oh, no doubt.

—*The Wire*

Adam Smith was no stranger to storytelling. Smith's concept of the impartial spectator, what he sometimes calls "the man in the breast," is the second self we develop as part of the maturation process. When we play with our fellows we learn that it feels good to receive praise and feels bad to be attributed blame. But we also learn that receiving praise for something we did not earn feels empty, and that receiving blame for an action that was not worthy of blame feels like a kick in the gut. When other spectators lack impartiality and pass judgment based on their own interests, we learn that their judgments of what actions deserve praise or blame cannot really be trusted. We develop then the impartial judge internally.

The word "conscience" can stand in for "impartial spectator," but I submit that something important happens when we think of the impartial spectator as a person, someone with whom we can keep company, and someone who, though residing within us, is not the same as us. When I think of "my conscience," I experience it as speaking to some part, some sub-element, of myself. When I think of the impartial spectator, as a person, I imagine someone with whom I can carry on a conversation, even if it is an internal conversation. Imagined as a separate, though internal person, the impartial spectator is (ideally) not subject to the pressures of my own narrow self-interest, and can pass impartial judgment on my thought and actions. The only way I can secure the praise and avoid the blame of the impartial spectator is to truly act in a way that is worthy of praise and avoid actions that are worthy of blame.

There is some serious storytelling going on in the development of the impartial spectator. In the construction of the impartial spectator itself, I have to tell myself that there is a "me" that is separable from the true self, the self that harbors its own interests. The impartial spectator version of me has all the formal and tacit knowledge I possess, but none of the narrow self-serving interests that the partial me possesses. I have to tell myself the story that this internal companion is more important than any other judge I might choose—more important than my closest kin, more important than my supervisor, my priest, or my fondest

friend—as all these folks are likely to introduce their self-interest in their judgment of my thoughts and actions. I have to discipline myself to ensure that it is the impartial spectator within the breast to whom I am listening, and not self-interested others, nor my too forgiving self-indulgent partial self.

When attempting to pass the test of blame/praiseworthiness of the impartial spectator, I am hoping that I come out the hero—not necessarily the grandstanding hero—in fact, such a desire is a sign that my real intent is to seek praise rather than praiseworthiness. I am telling the story of my motivations and actions to the impartial spectator to check whether the actions are in fact worthy of praise or blame. I note that the stories we tell the impartial spectator involve the full spectrum of McCloskey's bourgeois virtues, including: prudence, love, faith, hope, courage, temperance, and justice. Further, these virtues combine to constitute other virtues, such as integrity and honor.

By "honor," I mean living one's life according to a moral code, even (especially) if it comes at a price. It is worth noting that honor is tricky, as honor alone does not tell us the content of the code. One can be part of a criminal gang or terrorist organization and live by a code, and be resolute in the conviction that one has lived by that code, and so, has acted honorably. But our bourgeois characters bring some important content with them as they craft their stories. In their story craft, bourgeois characters have to hold in high regard the value that they create in their enterprises, *and*, in keeping the full spectrum of bourgeois virtues, they will hold in high regard the ways in which an enterprise supports and serves clients and customers, employees and suppliers, and the broader social fabric into which it is woven. The "code" by which our bourgeois characters live, in other words, is not a simple formulaic code of prudence-only. The bourgeois code is multifaceted. It must be so, as the moral terrain of commercial life (embedded within a broader social context) does not lend itself to formulaic solutions. This terrain is complicated in ways that require careful thought and deliberation.

The bourgeois character cannot hold a place of honor in our stories—she will not pass the test of the impartial spectator—if she does not get the virtue balance right. To put it in McCloskey's terms, too much prudence in a situation that calls for justice, courage, or love, and our hero is no hero. Similarly, if our bourgeois character has no regard for prudence, she fails to understand how prudence, in appropriate measure, lends support to the other virtues. If in a crisis, for example, our character gives away her entire stock of goods out of love for her neighbors and community, but has no way to pay for new inventories—in other words, if

she utterly disregards prudence—then her enterprise will fail, her customers will be without her services, her suppliers will lose revenue, and her employees will no longer be gainfully employed. In other words, she will have failed to love effectively, because she has failed to be prudent. The bourgeois character, and her impartial companion, must take the full balance into consideration.

3. Bourgeois Heroes in Extreme Environments

> *I guess when businesses open up and they start being fully operational, it reminds us what normalcy used to be like.*
>
> —Waveland, MS resident, speaking about the re-opening of Wal-Mart and other businesses following Hurricane Katrina.

Scholarship on the roles that narrative and story play in human development has grown significantly for the past three decades. Across a variety of disciplines researchers conclude that stories help us filter and make sense of complex and conflicting information we encounter; that stories help us gain clarity around our aims, purposes and identities; and that storytelling and story listening are essential to civic life (Berger and Quinney 2005, McAdams, Josselson, and Lieblich 2006, Nussbaum 1997). MacIntyre (1981) and Coles (1989), for example, emphasize the important role the stories of our childhood play in connecting the individual to others within our circle, to our community, and to the broader social world. As MacIntyre (1981: 216) asserts, "Deprive children of stories and you leave them unscripted, anxious stutterers in their actions as in their words. Hence there is no way to give us an understanding of any society, including our own, except through the stock of stories which constitute its initial dramatic resources." Drawing upon this narrative stock, our lives become our own great stories, "stories in which characters must overcome great obstacles to find something of great value," (Taylor 2001: 21). Similarly, Nussbaum (1997) argues that by reading great works of literature, whether classical (e.g., Sophocles' *Antigone*) or modern (e.g., Toni Morrison's *Beloved*) we encounter characters in circumstances vastly different from our own. Such encounters develop our narrative imagination, extend our capacity for compassion to people outside our immediate sphere, and therefore, enhance the prospects of robust civic life. Taylor (2001) adds that shared stories

serve as a sort of social glue that connects us to one another as the storyteller and listener co-create meaning. As Taylor (2001) observes, everyday storytelling such as gossip, nostalgia, and reminiscence are attempts at being understood within the social context. Such storytelling, and the moral lessons they convey, sometimes rises to the level of great literature, but even when they stay at the level of the mundane, they profoundly shape the moral imagination and identity of a community.

Elsewhere, Storr and I have argued that storytelling can shape economic action in extreme environments. For example, we examine the role that collective narratives have played in community rebound after disaster. Stories of displacement, relocation, and rebuilding within New Orleans' Vietnamese-American community, for example, rendered the post-Katrina context more familiar and less daunting and paved the way for a remarkably robust recovery (Chamlee-Wright and Storr 2009, 2010). Further, stories that captured a particular cultural trait or set of values at work within the community, such as adherence to a strong work ethic, affirm for the storyteller and impart to the listener lessons of "who we are" as a community. Stories celebrating St. Bernard Parish's working class roots, attitudes, and values, for instance, were a source of resilience within that community (Chamlee-Wright and Storr 2011).

Our research on post-disaster recovery also provided opportunities to hear stories of people in business, and some of the stories we heard were about what we might consider bourgeois heroes, such as: the owner of Le Chat Noir, a cabaret theatre in the Warehouse Arts District in New Orleans, who reopened within three months after the storm to ensure that local performing artists had a place to work and neighborhood residents had a place to gather; the owner of a cooking school in New Orleans' Garden District who turned his facility into an emergency kitchen for disaster relief workers to find freshly cooked meals, a place to gather and plan, and an internet connection; the owner of an True Value Hardware store in St. Bernard Parish and his wife who were "not lazy people—we work," who raked out muck, snakes, and toxic waste to get their business up and running because the business that had been in his family for 45 years was his "all," where he "set out and have worked [his] entire life"; and the first generation migrant from Vietnam who, facing complete devastation of her successful seafood processing business, turned to baking and selling cookies to people attending church services to make ends meet while she rebuilt her business; or the owner of a gas station and laundromat in the Lower Ninth Ward who reopened his store, despite frustrating

regulatory obstacles, because the members of this community needed a safe, clean place to get basic supplies and take care of the mundane tasks, such as doing the laundry, that made daily life tolerable in a post-disaster environment.

With further examples too numerous to describe, I offer in greater detail one example of how a business person leveraged his bourgeois identity to address the challenges presented by the extreme environment of a post-disaster context. With this example, I hope to illustrate how story craft impacts decision making of the bourgeois character and creates the possibility of a bourgeois hero.

When Hurricane Katrina hit, James Ray Cox was the manager of the Wal-Mart Supercenter in Waveland, MS.[4] Situated in Hancock Co. along the Gulf Coast, the city of Waveland was considered "ground zero" for Katrina's landfall and the 26-foot storm surge that ravaged Mississippi's coastline. Cox lived with his wife and three children in Waveland. The plot of Cox's story centers on the reopening of the Wal-Mart under a tent in the store's parking lot just 19 days after the storm, which paved the way for a fully functional supercenter by Thanksgiving two months later. Many members of the community credit the reopening of the local Wal-Mart with giving the community what it needed to rebound and recover: supplies critical to survival and rebuilding, and a clear signal that normal life would eventually return to the community.

Katrina's heavy winds and storm surge destroyed Cox's home. At the time the interview team met with Cox, he and his family were living in a trailer on their property. Cox could have asked Wal-Mart to assign him to a different store in another part of the country, but he decided to stay in Waveland. Cox had become an entrenched part of the business community, serving on the board of directors of the Chamber of Commerce. He had come to know the members of the Waveland business community as friends and many of his customers as neighbors. It was for these reasons that he opted to stay in Waveland, rebuild his home, and rebuild the store. In other words, Cox's story is not a prudence-only story. Instead, Cox's story weaves together prudence, love, hope, courage, a sense of duty, and honor.

As the manager of a Wal-Mart store, he acts on behalf of what is arguably the ultimate symbol of the impersonal market order. Through the course of the interview, he never conveys any doubt that the firm's interests must be served. At the same time, it is clear that Cox is concerned for his own family and his close network of personal friendships, many of which are grounded in the local busi-

4 Storr and I deploy this example in Chamlee-Wright and Storr (2015).

ness community. Situated between his close network of personal ties and his role within the Wal-Mart firm, is the Waveland community. Pre-Katrina, Waveland's population was 6,674. Arguably, had one of those 6,674 people come into the store asking for special assistance prior to Katrina, Cox would have likely called upon a prudence-only narrative to guide his response. But, in a post-disaster context, the narratives we might ordinarily call up often don't seem to fit. In the murky post-Katrina social context, Cox had to draw from a richer storehouse of narratives to respond appropriately.

> Cox: You see [your fellow business] people, they've lost their homes and they totally lost their business. And now, they're self-employed. …If you don't do something to help this community and give them a place to buy groceries and give them a place to buy the necessities of life to rebuild their lives, … it probably would not be worth your while to [rebuild]. Would you as an individual expect someone to live here? You know, if you have to drive twenty, thirty, forty miles every three or four days? Is it worth your time to rebuild what was destroyed? …So that's one of the things we looked at, you know, we have to do something. Granted, you know, our customer base probably was cut more than in half. But it probably would be decreasing today had our store and other businesses not decided, you know, just take a stance and come home, you know, and build this thing and get it back up and running as fast as they can… You have to take a stance, because you have a vested interest in the community. You have a home.
>
> Both of my children have been—they were born in New Orleans in Tulane Hospital—but they've both been raised here, are being raised here. I have a son who's four, will be five… and my daughter turned two in November. My wife and I chose to have children here and we want to raise our children here. There's some days we second-guess that now. But I mean it's fine, I mean it's gonna be fine. And I think the resilience of the people here in Hancock County will help to beat that.

Here, the focus of Cox's narrative is to serve his fellow businessmen and the broader Waveland community, and his means for doing so is to sell them groceries and supplies. He frames the reopening of a box store as "taking a stance" in favor of community. This may sound overly dramatic, but in post-disaster contexts, residents and small business owners contemplating a return are prone to waiting

on the sidelines until they see a major player in the community return, reinvest, and rebuild (Chamlee-Wright 2007, Horwitz 2009). As the manager of a box store that serves as a major employer, supplier of goods, and symbol of a community that is back up and running, Cox takes on a sense of paternal responsibility. Cox's narrative is not the talk of prudence; it is the talk of honor, having a code, and the courage to live by that code. Cox deploys the metaphor of "home" to connect the intimate sphere of family and personal ties to the broader Waveland community, and it is a re-opened Wal-Mart store that links the two. His efforts to leverage his position as Wal-Mart manager to serve the Waveland community comes at a personal cost to his family, but because he takes on a sense of paternal responsibility for the community as a whole, the tradeoff makes sense to him. In his mind, James Ray Cox is getting the values balance right.

According to Cox's narrative, then, Wal-Mart has become a civic leader of sorts. But recalling Nussbaum (1997), robust civic life requires that we are capable of extending our narrative imagination beyond our immediate experience and relationships. Soon after he returned to Waveland following the storm, Cox recalled feeling as though his dreams had been shattered—that he had worked tremendously hard and had been proud to be the manager of a gleaming new supercenter, only to be wading through muck and devastation. He then noticed a woman with an infant who had asked to borrow a shopping cart.

> Cox: But to see a lady carry a baby that didn't have clothes. The lady didn't have any shoes on and she was asking to borrow plastic bags so she could make shoes out of it. And then she asked to borrow a shopping cart, so instead of carrying her baby four miles home she could roll him… Things like that will teach you, when you see a person just in shambles. I'll never forget my son crying when we walked back home to take his things [to the dump]. Things like that will teach you.

The sight of the woman in his store plays two roles in Cox's narrative. First, it was a reminder to him that feeling sorry for his own plight was not what should be occupying his attention. Second, and we see this in the seamless transition from the woman and her child to thoughts of his own son, that he has extended his narrative imagination enough to gain a sense of empathy and compassion for this person who is unknown to and socially distant from him. The cultivation of an extended sense of compassion that Nussbaum (1997) attributes to great works of literature, unfolds for Cox in this bit of real life drama played out in his store. It

is in real moments such as this that Cox can imagine what role a Wal-Mart Supercenter can play in rebuilding civic life, and the leading role he can play in the community's story of recovery if his actions are guided by love, courage, and honor.[5]

When asked to follow up on his observation that people in his county were particularly resilient, Cox described the excitement that he and his staff felt in the days running up to the tent opening. Here again Cox combines narratives of hard work and resilience—values customarily associated with bourgeois market life—with values like connectedness, love, and hope usually associated with the intimate sphere of family and close friendship.

> Cox: But you know, within days after the storm when all the law enforcement from Florida and all over the US and Virginia and all those guys were here, they're like, how in the world is it that y'all are excited about putting up a tent knowing your store was destroyed and your house was destroyed and you should be home working on your house and you're doing this with a smile and enjoying what you're doing. I don't know. We just get up and do it again. You know, you just do it. I mean you just do it. And maybe it's because our hearts are big. I don't know. We just do it. We got up, pulled up our bootstraps and just went to work. You do that, because you see your friends and neighbors and they're in [trouble] and in some ways, they might not be able to provide for themselves. So you gotta help them and provide.

Notice that immediately after describing an ethos of self-reliance, i.e., they "pulled up [their] bootstraps and just went to work," he connects that work ethic to a responsibility to provide for others within the broader community (known and unknown) who cannot provide for themselves. Here, Cox is creatively weaving self-reliance and work ethic, often associated with individual achievement and material gain, with "having a big heart" and providing for others. This formula works because, in this bourgeois hero's mind, there is no irresolvable conflict between the values of prudence and the values of love, hope, courage, and honor.

5 The central role that Wal-Mart's reopening played in Waveland's recovery was acknowledged by residents as well. As one Waveland resident observed, "It was Wal-Mart under a tent. We were all thrilled. Oh, we can go buy pop, or we can get, you know, our essentials. So we were really happy about that. That was a forward motion. And then Sonic opened. We had the busiest Sonic in… the whole United States. It made more money in a shorter period of time than any Sonic did for a year in the United States. Amazing. It was like fine dining. Ooh, this is wonderful, you know, 'coz there was nothing else then. There was no stores. There was nothing that was even halfway resembling normal" (Chamlee-Wright 2010: 50-51).

4. Stories as a Driving Force in the Market Process

This device isn't a spaceship, it's a time machine. It goes backwards, and forwards. It takes us to a place where we ache to go again. It's not called "the wheel." It's called "the Carousel." It lets us travel the way a child travels; around and around, and back home again, to a place where we know we are loved.

—Don Draper, pitching an advertising campaign for the Kodak Carousel slide projector

Mad Men

Extreme environments, such as a post-disaster setting, are useful in illustrating the role of story craft in economic action because the stories, and the virtues that drive the stories, are prominently on display. That said, story craft shapes economic action generally, in ordinary as well as extraordinary contexts.

Stories in Everyday Market Action: At one end of the economic storytelling spectrum are bourgeois heroes, leveraging their status when the stakes are high. At the other end of the spectrum is the average person engaging in day-to-day economic decisions of consumption, production, and labor supply. Certainly, consumption decisions are, in part, prudence-oriented cost-benefit analysis. But as the marketing discipline and marketing industries suggest, consumption patterns also reflect the scripts we craft for ourselves about our identity and what matters to us. When I purchase a Brioni suit, or a cheese cave, or a hybrid vehicle, or organic no-dye cotton diapers, I am crafting my identity as "a powerful person," "a foodie," "a good steward of the environment," or "a conscientious parent." Many people, particularly those who have invested heavily in their human capital, craft similar identity stories in their choice of career. The material objects that are the subject of transactional exchange can take on deeper meaning if they are part of a story that connects us to our humanity. In the *Mad Men* scene excerpted above, the Don Draper character brought his colleague to tears because he told a story of how a Kodak product could bring him back home, to a place where he knew he was loved.

Stories also shape our thinking and action in times and circumstances of financial hardship. For example, contexts of severe and widespread poverty and

post-conflict settings create significant incentives for individuals to predate against others. The stories we tell about "who we are," "who 'they' are," and "what we deserve" can determine whether we persist in the trade game or default into the predation game. (See Coyne 2007.) When faced with temporary economic hardship, we may survive by telling ourselves the stories of our past, such as stories of our own previous hardship, or stories of ancestors who endured and overcame much worse. We may survive by telling ourselves stories of potential reward—for our children, for example, or for ourselves in the afterlife—if we endure harsh working conditions, long hours, and low pay. Our actions in these circumstances can be packaged into the prudence-only parlance of economists, as in, "The marginal benefit of another day's work in this harsh environment exceeds the marginal cost, so I will persist," and "It's cheaper to trade than predate, at least at the moment, so I will not predate." But real (non-economist) people generally don't think in these terms. They tell themselves stories: stories of personal resilience, stories of honor, stories that tie present behavior to future reward. Personal resilience may depend on Love Stories ("I endure for you"), or Faith Stories ("I will show that I am worthy of God's love by carrying on"), or Courage Stories ("I will not let this defeat me"). Such narratives that drive personal resilience, in turn, have profound implications for broader patterns of social cooperation.

Stories in Entrepreneurial Action: It is worth considering also the ways in which story craft impacts entrepreneurial action. By some accounts, only the simplest stories are at work. Kirzner's (1973, 1979) story of entrepreneurship, for example, is a story about being alert, noticing an arbitrage opportunity. "I notice that apples sell for $3 in the country and $3.75 in the city. It costs $.25 to transport the apples, leaving $.50 in pure economic profit. Strike before someone else notices and acts." But in most market settings there will be much greater complexity. The imperative to strike may seem less clear, and caution rather than urgency the more prudent course. Further, prudence seems not to characterize many of the stories of entrepreneurial action. Rather, other elements of the story are necessary to promote action. Before I strike, I need to believe that I am the only one noticing the opportunity—or at least the only one noticing who is willing to act. If I assume others are noticing before me, and are capable and willing to act before me, from my perspective, the opportunity evaporates. If I tell myself that another will get there first, there is no perceived arbitrage opportunity. So if I am planning to act, I must believe that there is still an opportunity upon which to act. But in most cases, I have no way of knowing whether this is true. I

have to tell myself a story. I have to convince myself that the opportunity is actually there. Moreover, I have to tell myself a story that success is possible. This is fairly straightforward if all we need is prudence stories. All of Kirzner's examples are prudence-only examples, and therefore, the required action is obvious—the $20 bill lying on the beach that no one else has found. Prudence tells us to stop and pick it up; profit opportunity seized! But profit opportunities are usually far more complicated than this. Do consumers really want what I will be peddling? What's the story that convinces me that they do? What story convinces me that I will be successful in persuading others that they need this product, or should try out a new way of getting their inputs? Given the failure rate of entrepreneurial ventures, entrepreneurs *need* to delude themselves. People need to believe that they can be the next Steve Jobs. In McCloskey terms, all stories of entrepreneurial action are Hope Stories. As Lachmann (1956 [1978]) argues, entrepreneurial activities that take place in real time require a positive (hopeful) expectation that success and mobility are possible.

Stories of Organizational Leadership: Every organization, whether a for-profit firm, a non-profit organization, a government agency, a church, a college, or university has a story, or more accurately, a collection of stories, that answer the questions, "who are we?" and "why are we here?" Robust stories can have significant economic consequence. Stories of commitment to quality fill information gaps for customers who may have no direct way of assessing quality prior to purchasing a product. Stories of loyalty to employees can coax greater effort, productivity, and longevity from talented staff. Such narratives may be carefully constructed, as with mission statements that adorn board room walls. An organization's stories may also take the form of less formal expressions of the values that employees, and perhaps their clients share, as in "our employees and customers are like family." Stories can recall an organization's origins, as in Phil Knight's story of how the vision for Nike took shape in response to a course assignment while completing his MBA in Finance at Stanford University. Stories can also point to the future, as in, "Someday everyone will own an Apple."

Saying that all organizations *have* stories is not the same as saying that all stories support and advance an organization's aims and purposes. Stories professing a corporate culture of "employees are family" will provoke cynicism and resentment if the organization's employment practices are at odds with this narrative. Stories that cast a firm as a friend to the environment will pay a steep price in terms of public relations, if it is prone to making environmental blunders. A CEO who

tells a story of why sacrifice is needed, but is not the first to lead by example, will not inspire others to reveal ways they could do more with less. And organizations that are capable of telling Prudence Stories only, are apt to leave employees feeling like the organization treats them as means, mere factors of production, not human beings seeking opportunities to grow and flourish. That said, an organizational leader skilled at story craft can be as critical to a company's success as a CFO skilled at managing the organization's cash flow.

Organizational leaders who deploy narrative effectively recognize that people want to be part of a *great* story. The medical researcher doesn't just want to work for a medical equipment manufacturer, she wants to be a part of creating a world in which all patients have affordable access to a life-saving device. The production manager of a performing arts center does not merely want to trim costs when the director announces budget cuts, he wants to play his part in saving a great institution. The Title IX coordinator of a college or university does not merely want to avoid the costs and public embarrassment of discrimination claims, she wants to be a part of building an institution that is a model for how people should treat one another in the workplace and in educational settings. Organizational leaders who tap the human desire to be characters within a great story tap human potential that cannot be captured in an employment contract or in prudence-only transactional relationships.

5. Concluding Remarks

McCloskey's body of scholarly work challenges us to take talk seriously as a driving force in economic action and outcomes. I have argued here that storytelling talk in particular has an important role to play in daily economic action of consumption and production, entrepreneurship, and organizational leadership, and in extreme environments in which bourgeois heroes might emerge. While mainstream economics tends to offer prudence-only narratives of economic action, story craft, and the values that make up the stories we tell about who we are, what matters to us and why, which thoughts and actions are worthy of praise and which are worthy of blame are central to Adam Smith's system of moral thought. When we tell our story to the impartial spectator, we want to be the good guy, and being the good guy requires that we are getting the values mix right—that we are drawing upon the full array of virtues that balance prudence with love, hope, courage, justice and honor. I submit that by reclaiming the importance of

narrative that was present at the founding of classical political-economic thought, economists have an opportunity to gain greater depth of understanding of the characters we play in economic life, the choices we make, and the social and economic patterns that emerge as a consequence.

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A "Model" Model: McCloskey and the Craft of Economics

Joshua C. Hall[1, 2]

1. Introduction

Deirdre Nansen McCloskey has made tremendous contributions to our understanding of the wealth and well-being of nations through both her teaching and scholarship. In thinking about how her work has influenced my own, I have to admit it was difficult to know where to begin given the breadth of her scholarship. Should I start with her work on open fields and enclosure in England that helped to get me interested in economic history while a masters student at Ohio University (McCloskey 1972; 1976; 1991)? Or her price theory book, which I used in my intermediate micro classes at Beloit College (McCloskey, 1985)? Her work with Stephen Ziliak that I seem to cite in most referee reports I write (McCloskey and Ziliak, 1996; Ziliak and McCloskey 2004; 2008)? Her advice to young economists, which I read in graduate school (McCloskey, 2000)? Her trilogy on the bourgeois era (McCloskey, 2006; 2010; 2016)? Ultimately, I didn't know where to begin.

So like any academic would, I pulled all her books off the shelves in my office and just started reading. Two things struck me while reading through her work.

1 Joshua C. Hall is Associate Professor of Economics, and Director of Center for Free Enterprise, West Virginia University. He was Elbert H. Neese, Jr. Professor of Economics, Beloit College, 2012-2013.

2 This essay is based in part on comments made in honor of Deirdre McCloskey at a panel discussion on "The Ideas and Influence of Deirdre Nansen McCloskey, II" at Beloit College on November 3, 2016.

First, how much of her career has been focused on trying to improve the craft and practice of economics research and teaching. As an economist, McCloskey is definitely more Friedman than Stigler insofar as she believes in the power of teaching and preaching to change the economics profession and the world (McCloskey, 2001). By my rough estimate, at least 20 percent of her scholarly output is related to exhorting the economics profession to do a better job as teachers, researchers, and humans. The second thing that struck me while reading her work is how much of her advice I had internalized without realizing it. Her influence on me, and I suspect on many others, is so deep that we often don't attribute our actions to her efforts. Folk wisdom has to come from somewhere and for many of us it came from Deirdre's sustained scholarship urging us to do our jobs better, whether it is organizing a conference (McCloskey, 1994), running a seminar series (McCloskey, 1995), writing well (McCloskey, 1999a), focusing on "oomph" not statistical significance (McCloskey, 1999b), or trying to better explain important things about the world in our research (McCloskey, 1997).

My claim is that Deirdre is one of the rare scholars whose influence shows up not only in her citation count, which is very high, but in the way that hundreds of economists go about their craft. As an economist, I certainly understand and appreciate comparative advantage and specialization. Not every economist needs to (or should be!) trying to nudge the economics profession towards the light. At the same time, the profession is better off as the result of her efforts.[3] She is a model "model" of how to do well while doing good![4] Read widely, keep an open mind, admit error, pursue questions that interest you, make sure part of your work focuses on the great conversation started by Adam Smith (1776 [1998]), and if you feel something is wrong or can be improved then speak up.[5]

In the remainder of this essay, I will discuss some of my research on economic education and economic freedom. Along the way, I hope to illustrate how my scholarship, even while coming to conclusions that McCloskey might not agree with, is influenced by her efforts. I begin by discussing my efforts in the classroom and my subsequent research on economic education, much of it conducted while

3 It might be that nothing much has changed if I have to continually refer to her work with Ziliak on statistical significance in numerous referee reports. My argument here is a *marginal* one and Deirdre and Stephen have certainly made an impact on the margin with their efforts. I am proof of that! At the same time, I (and undoubtedly they) wish there was more evidence of their work having more "oomph."

4 Although in a different vein, very much in the same spirit as Tullock (1984[2016]).

5 A great example of her speaking out in favor of injustice is her commentary on Notre Dame ousting its heterodox faculty members and reconstituting a new economics department (McCloskey, 2003).

beginning my career at Beloit College.[6] I then move on to briefly discuss the core of my scholarship, the measurement of economic freedom and its consequences. I then conclude with some final thoughts about McCloskey as a model 'model.'

2. Economic Education Inside and Outside the Classroom

From the very beginning of my academic career I have been interested in economic education. Perhaps that is because I know firsthand the difference between a good and a bad teacher. I earned a 'C' in principles of microeconomics and was so profoundly bored that I would frequently attend my American government class across the hall at 8:00 am and go home rather than sit through another boring lecture. Fortunately for me, I had to take principles of macroeconomics. What a change! From the very first lecture with Richard Vedder, the light bulb went off and economics was no longer difficult. He made economics come alive by talking both about current events but also his own work in economic history. Economics was no longer abstract diagrams, it was more stories about what happened in an attempt to better understand what was going on. Once I was taught about actual economics by Vedder, what was boring and unclear snapped into focus.

My story would seem to resonate with what McCloskey has written about teaching economics. In her essay "The Natural," McCloskey (1992: 239) argues that we cannot teach someone to think like an economist. "A nineteen-year old has intimations of immortality, comes directly from a socialized economy (called a family), and has no feel on the pulse for those tragedies of adult life that economists call scarcity and choice." Instead, she argues, economists should not try to get students to "think like an economist" but rather just teach them economics facts and stories that they might be able to use in the future. At a minimum, teaching facts and stories might inspire them for future study.

In one sense, I have tried to take much of this to heart. My principles lectures are primarily stories. Yes, I teach about supply and demand and equilibrium. But most of the action occurs in the movement to equilibrium. That's where stories are important because they help students to articulate some of the numerous ways that an individual's behavior might change in predictable ways to exogenous

6 I would be remiss if I did not also mention the influence of Jeff Adams, Emily Chamlee-Wright, Bob Elder, Jerry Gustafson, and Warren Palmer. How fortunate was I to step into a department with over 100 years of excellent teaching. Combined with some great students, it was a marvelous place to work and learn.

changes in markets. I try to get students to use what Emily Chamlee-Wright (2011) calls their "economic imagination." The economic imagination is the ability to see and understand the different choices and outcomes that are likely to occur under different economic and political institutions. For many students this is difficult to do because, as McCloskey (1992) pointed out, they haven't lived enough to see how reasonable people might respond to a situation. As I like to think about it, intuition can be a terrible guide to understanding individual choice if you have zero ability or experience that allows you to step into someone else's shoes. For example, in teaching about child labor it has been my experience that many students cannot put themselves in the shoes of a young mother in a developing country who cannot afford to send her child to school and instead must send the child to work. For my young students being able to afford to have their kids go to school rather than work is not something they can fathom. Showing them that child labor doesn't really vanish from an economy until average incomes reach $5,000 (Krueger, 1997) forces at least some of our young students to confront the existence of trade-offs.

When first learning economics, it is dangerous for students to ask "how would I respond in this situation" because they don't have knowledge of all the relevant trade-offs, they are not actually facing the opportunity cost of a decision (Buchanan, 1979), and there is considerable heterogeneity in preferences across individuals that will influence how important a particular change is on the margin. In class, I illustrate this point by talking about Australia's $3,000 "Baby Bonus" policy in 2004 detailed in Gans and Leigh (2009). I begin by telling students that the Australian government announced in 2004 that children born on or after July 1, 2004 would receive $3,000. Clearly the incentive is to encourage people to have more babies, which the students get. Understanding unintended consequences, however, is more difficult. "How might this change people's behavior," I ask? No responses from students. "What about those with babies due on June 28th? They get nothing," I ask. Typically I get a response like "Well that's a shame for them that they are going to miss out on $3,000 by a few days, but there is nothing you can do about delaying birth." At that point I show them the raw data on births over time in Australia from Figure 1 of Gans and Leigh (2009). The figure shows a unusually low number of births in late June and a spike in early July. Turns out that people can delay having babies by going on extended bed rest! I then remind them that it is not what they would do in a situation but what some people will do on the margin. In my experience, this discussion makes students more open

to the empirical results showing people responding strategically to changes in policies and institutions.

Getting students to see that there are a myriad number of ways that individuals can respond to incentives, removed from the emotional context of real life, is why I use examples from popular media, in particular music (Hall and Lawson, 2008a; Lawson et al. 2008; Hall et al., 2008) and *The Simpsons* (Hall, 2005; Hall et al., 2016) in my classes. As we argue in Gillis and Hall (2010: 90), "Because students frequently find it difficult to use the tools of economic analysis on situations they find normatively unappealing, evaluating the costs and benefits of potentially awkward situations are made easier if discussed in the context of a fictional animated television show." In addition to getting some students to put normative considerations aside, use of characters that are well known to some students lets the characters' decision-making resonate with students in a way that cannot happen with an abstract representative agent. The stories told through televisions, movies and songs resonate with people and often inspire them to learn more, which is why I decided to edit *Homer Economicus: The Simpsons and Economics* (Hall, 2014). What better way to inspire students of all ages to learn more about economics, than through the lives of characters on the longest running sitcom on television?

I have won teaching awards at both a small liberal arts college and an R1 state university. I attribute a large part of my success to having good mentors, such as Richard Vedder, Lowell Gallaway, Russell Sobel, and my colleagues at Beloit College. At the same time, I have always introduced something new into every course I teach, going back to my time as an adjunct faculty member at Capital University. As McCloskey (1999c: 194) points out in her essay on "Duty and Creativity in Scholarship," "…anyone who can't learn a lot about economics from teaching Economics 1 is intellectually dead." Too many economists eschew the chance to learn something and improve their courses in favor of minimizing class preparation. Activities and assignments I have done in my principles classes to shake up my teaching and students' learning include: changing textbooks, not using a textbook, requiring students to listen to podcasts (Hall, 2012), assigning students to write op-eds based on current policy issues (Hall and Podemska-Mikulch, 2015), using walkie-talkies to make the large-lecture seem more intimate (Sobel and Hall, 2007), and teaching through historical examples (Skarbek and Hall, 2009). These pedagogical experiments would have been worthwhile, even if I did not write an article about the pedagogical benefits and costs of each approach, because it forced

me to think about, and learn, from what I was doing in class.

Beyond doing different activities in the classroom, another way to improve one's teaching is to talk to others about teaching. As a young faculty member I was fortunate to have Emily-Chamlee-Wright across the hallway from me to bounce ideas and concerns off of. *Homer Economicus* really took off as a project after talking to other economists at the Southern Economic Association meetings about how they use *The Simpsons* in their classes. One of the reasons I wanted to edit an economic education journal is so that I can learn from what others are doing and shape the types of pedagogical research that can get into print. A classic economic education article is Fels (1993) where he argues in favor of testing the efficacy of different methods of instruction in the classroom because it is superior to saying "This is what I do, and I like it." While I agree with the benefits of testing, I also believe that one can learn from economists saying "this is what I do, and I like it." The average treatment effect is just that – an *average*. Methods interact with the personality of the instructor to produce very different outcomes, which might in part be the intention of the professor. For example, an instructor might not care about average learning gains in that particular class but whether the students become majors in the future. Journals are a great place to share what one does in the classroom with the scholarly community.[7]

In order to share with the scholarly community, however, you need to get the article written and published somewhere. McCloskey (1999a) makes two statements regarding writing that I had internalized without attribution after so many years of reading *Economical Writing*. The first can be found on page seven, where she states "You do not learn the details of an argument until writing it in detail, as in writing the details you uncover flaws in the fundamentals." As a teacher and dissertation advisor this is one of the hardest lessons to get across to students. "Enough talk, write!" is something I say often to students. While I have my students write and revise a lot (see, for example, Hall and Harger (2015)), it is not really because I think we can teach writing. Like McCloskey, I think we can teach *about* writing. As she puts it in *Economical Writing* (p. 14), "What you are really trying to learn is like good sewing or carpentry, watching what you are doing and giving it some thought." The importance of thinking about the audience and

7 This is why I guest co-edited two special issues of the *Journal of Economics and Finance Education*: one on Austrian economics and economic education and the other on Public Choice and economic education. Overviews of these special issues can be found in López and Hall (2011) and Hall and López (2015).

continual revision in response to my feedback are the only thing I really teach about writing.

3. Engage in the Great Conversation

A constant theme in McCloskey's work is passion. She is *passionate* about the topic on which she is writing, whether it is the enclosure of open fields (McCloskey, 1972), persuasion (McCloskey and Klamer, 1995), or British pig iron productivity, 1870-1939 (McCloskey, 1968). It is that passion for learning, for teaching, for *persuading*, that has led her to author seventeen books and over 400 scholarly articles, book chapters, and reviews in her career. In doing so she has been a vigorous participant in the great conversation about economics and the world around us that has been going on since before Adam Smith's (1776 [1998]) inquiry into the wealth of nations. As McCloskey (1997: 243) put it in her letter to a struggling graduate student:

> You can do it. You can be an economic scientist. Ask what matters to you. Do it. Find out something about the world. Really find it out. …
>
> I know, I know: fear. Will I get a job? Will I be a success? Oh, gosh. I should just take a piece of The Literature and run a new assumption or a new regression.
> Please don't. It's not dignified. It's not ethical. It's not true to yourself. It does not advance economic science.

As I have recounted elsewhere (Hall, 2014), Deirdre encouraged me as a young economic lecturer to pursue a book project on teaching economics through *The Simpsons*. What also occurred that night in 2003, however, is that I got to hear her talk for an hour over dinner about her then 1600 page book manuscript that would eventually become her trilogy on the bourgeois era (McCloskey, 2006; 2010; 2016). Many things have stuck in my mind about that dinner at Bexley's Monk restaurant, but I will never forget how in awe I was of her passion about this project and its importance to our understanding of the Industrial Revolution and modern economic growth. While many are (rightly) in awe of the arguments McCloskey advances in these three volumes, I am equally impressed and inspired by her spending more than a decade working on the trilogy. As a scholar, Deirdre is a model of how to write for the ages – by writing deeply and extensively on what

you think important, even if it is not always fashionable or what will get you in the top journals.

This is a message that I try to keep in the back of my mind while conducting my own research on measuring economic freedom. For example, I am fortunate to be a co-author of the *Economic Freedom of the World* (EFW) annual report with James Gwartney of Florida State University and Robert Lawson of Southern Methodist University (Gwartney et al. 2016). In the annual report, we produce an index of economic freedom for a large number of countries. For example, in the 2016 report we score and rank 159 countries on the extent to which the country's policies and customs are consistent with a classical liberal definition of economic freedom that emphasizes the importance of private property, limited government, the rule of law, and voluntary exchange. The creation of the index, first appearing in Gwartney et al. (1996) and annually since that time, has allowed economists, political scientists, sociologists, and scholars from dozens of other disciplines to empirically test relationships between economic freedom and an almost unlimited amount of outcomes that they find important (Hall and Lawson, 2014).

I work on the EFW project because I think it is really important to measure economic freedom well so that scholars can better explore the macro-economic policy conditions that lead to human flourishing.[8] In my opinion, this is at the core of the great conversation started by Adam Smith and at the core of the Upton Forum (Chamlee-Wright et al. 2017). Maximizing economic freedom is not necessarily the same thing as maximizing economic growth, which is not necessarily the same thing as maximizing happiness, which is not the same thing as maximizing health, and so on. Trade-offs certainly exist on any number of margins and higher levels of economic freedom might have both benefits and costs. To understand any potential trade-offs, it is important to have an accurate and consistent measure over time and across space. The purpose of the EFW is to measure economic freedom – period (Bologna and Hall, 2014). In doing so, we allow other scholars the ability to ask the questions they want about economic freedom.

I have generally focused my efforts on measuring economic freedom at the country level and only have written a few papers using economic freedom indices to explain other country–level outcomes. Many of my earlier papers on the EFW were in response to papers written by others. For example, in Hall et al. (2008) we

8 It should be noted, along the lines of such work not being fashionable, that I receive zero credit on my annual productivity report for annually co-authoring the *Economic Freedom of the World* report.

comment on two recent articles that argue the EFW is "pro-business" or "pro-investor." As we highlight in that comment, the EFW index might measure some variables at the level of the business, but philosophically we treat all individual interests equally. Maximum work hour legislation, while counted as a business regulation, also impedes the economic freedom of workers to voluntarily work for more hours. Similarly, minimum wage legislation impinges on the economic freedom of employers to pay wages below the minimum wage and employees to accept wages below the minimum. Similarly, in Hall and Lawson (2008b) we comment on what is, and what is not, compelling evidence on the relationship between economic freedom and economic growth. In our paper (Bologna and Hall, 2014) for the Upton Proceedings in honor of James Gwartney, Jamie Bologna and I summarize some issues we commonly observe with research using the EFW and suggest avenues for future research.

When I have employed the EFW in an empirical fashion, it has primarily been to kick start research in an area that I thought was important or to fill a hole in the literature. A good example of the former is an empirical note I published with Bob Lawson on the positive relationship between economic freedom and a then-recently released index of peace between countries (Hall and Lawson, 2009). In Burgess et al. (2009) we provide further empirical evidence on the positive relationship between economic freedom and peace. Examples of papers that try to fill a hole in the literature include Hall et al. (2010), Hall et al. (2011a), Hall et al. (2011b), Hall (2016), and Beaulier et al. (2016). Of these papers, Hall et al. (2010) is my favorite. In that paper we attempt to provide an answer to a regular empirical finding in the cross-country growth literature, namely that increases in human capital are not robustly related to economic growth.

From a micro-economic perspective, the lack of an empirical relationship is puzzling because we have lots of evidence that individuals who receive more education or more training are rewarded in labor markets with higher incomes. At the macro level, however, how can it be that aggregate increases in human capital are not positively related to national income? The hypothesis we advance in the paper is that the aggregate effect of education and training depends on the institutions in a country. When institutional quality is high, increases in human capital lead to rising incomes overall. When economic freedom is low, however, individuals are more likely to use their higher levels of human capital to engage in activities such as rent seeking or emigration that are personally lucrative but not beneficial to the overall economy. We empirically test this hypothesis using multiple measures

of institutions from 1980 to 2000 and find that increases in human capital per worker are negative for growth over some ranges of institutional quality and only turn positive after reaching some threshold of institutional quality.

Due to my interest in state and local public finance I have focused much more of my research related to economic freedom at the U.S. state level. In Hall and Sobel (2008) and extended in Hall et al. (2013), my co-authors and I find that states with higher levels of economic freedom have larger increases in entrepreneurial activity. In a more recent paper, however, Hall et al. (2016) find no such relationship when controlling for spatial spillovers. Hall and Schiefelbein (2011) find that states with higher levels of economic freedom were less likely to have adopted medical marijuana laws. In Nattinger and Hall (2012), we try to explain the long-run determinants of state economic freedom and provide some empirical evidence that whether a state's legal system was based on civil or common law matters for current levels of economic freedom. Other papers analyzing state level economic freedom include Hall and Yu (2012), Hawkinson and Hall (2014), Hall et al. (2015), and Cebula et al. (2016).

An important area of future work related to economic freedom is heterogeneity in how individuals and groups are affected by economic freedom. At a most basic level, some economic freedoms mean more to some individuals than others. For example, conscription for military purposes is going to mean more to an 18-year-old male than to a 52-year-old female. Similarly, improvements in certain areas of economic freedom might affect different races differently, perhaps because of the way that discrimination is perpetuated through official policies. In a forthcoming paper, Brad Humphreys, Jane Ruseski and I look at the effect of economic freedom on racial health disparities. We find an inverse relationship between state-level economic freedom and self-reported health status. Interestingly, however, the effect is smaller for African-Americans compared to whites, meaning that increases in economic freedom lead to a reduction in the disparity in self-reported health between whites and blacks (Hall et al. forthcoming).

4. Concluding Thoughts

In this essay I have only begun to scratch the surface of McCloskey's influence on me as economist. In addition to her advice regarding teaching, writing, statistical significance, and engaging in the great conversation, she is a role model for caring about these items and the future of her chosen profession. Thankfully for future generations, she has not only forcefully made her opinions known in graduate classes and at the American Economic Association meetings, but also in print. It is important for both contemporaries and future economists to talk about the craft of economics so that we can learn from one another and through the process of writing. For example, I learned a lot about syllabus construction when thinking through my co-authored article on syllabus advice for the young economist (Chamlee-Wright and Hall, 2014). To borrow an analogy from McCloskey, it seems to me that trying to become a good economist is like trying to become good at sewing: you need to watch what you do and give it some thought based on the thoughts and experiences of others. I am grateful that McCloskey has shared her thoughts and experiences with us.

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Markets as moral training grounds

Seung (Ginny) Choi[1] **and Virgil Henry Storr**[2]

I. Introduction

Average real income in the world rose from about $3 a day in the 1700s to about $30 a day now, especially in capitalist countries. This phenomenal growth in real incomes achieved unprecedented improvements in the quality of life on our planet. Today, for instance, we no longer observe the economic deprivation, social cleavages, and political inequalities that were commonplace a few hundred years ago. The Industrial Revolution and the period of income growth that followed elevated our material wealth and human spirit. In *The Bourgeois Virtues: Ethics for an Age of Commerce* (2006), McCloskey chronicles, analyzes and defends capitalism. She argues that capitalism not only enriched the world materially but also enriches us morally. "Capitalism," she (ibid., 4) claims, "nourishes lives of virtue." As McCloskey (ibid., 23) argues, "fattening up the people, or providing them with inexpensive silk stockings … is not the only virtue of our bourgeois life. The triple revolutions of the past two centuries in politics, population, and prosperity are connected. They have had a cause and a consequence … in ethically *better* people. … Capitalism has not corrupted our souls. It has improved them." Not only, she explains, is it possible to live a virtuous life in market societies. Markets depend on virtues and, in fact, makes us better people.

The Bourgeois Virtues and the other books in her *Bourgeois Era* series (the *Bourgeois Dignity* and the *Bourgeois Equality*) are powerful defenses of the material and ethical possibilities of capitalism. Despite her powerful defense of capitalism, however, she is sparse on the mechanisms through which commerce teaches

1 Seung (Ginny) Choi is Assistant Professor of Economics, St. Vincent College.

2 Virgil Henry Storr is a Senior Research Fellow and the Senior Director of Academic and Student Programs at the Mercatus Center, a Research Associate Professor of Economics in the Department of Economics, George Mason University and the Don C. Lavoie Senior Fellow in the F.A. Hayek Program in Philosophy, Politics and Economics, Mercatus Center, George Mason University.

individuals virtues. Although she makes the claim repeatedly throughout the volumes, McCloskey is relatively silent on how the market teaches us the bourgeois virtues. In this chapter, we argue that market interactions have the ability to make us more virtuous through at least two mechanisms. First, markets allow us to reward market participants with the ethical qualities we appreciate and to punish those who behave viciously. Indeed, individuals in the market are sensitive to those who merely mimic virtuous behavior – or, worded differently, feel disingenuous – and prefer to engage with those who are genuinely virtuous. The market allows individuals to discover and reward those who behave in ethically desirable ways and, as such, selects for and encourages good behavior by market participants. Furthermore, these rewards and punishments grow in the presence of information sharing by *viva voce* and through reputation and rating systems. Second, every market transaction serves as an opportunity to learn about our trading partner's level of virtuousness and to discover those market participants who have the moral qualities that we admire. Consequently, the market can train individuals to become authentically virtuous in the long run.

Before we proceed further, clear definitions of the terms that we will interchangeably use here are in order. Commerce is the exchange of goods between traders who have and desire them. The market is the space where commerce occurs. As such, markets are also spaces where economic, social and moral exchanges occur (Storr 2008, Choi and Storr 2016a). We adopt McCloskey's broad definition of capitalism, which she characterizes in terms of markets; "market economy has existed since the caves" (McCloskey 2010, 16) and "[m]arket participants are capitalists" (ibid., 260).

The next section summarizes the core argument in the *Bourgeois Era* series: bourgeois life is materially and morally enriching. *Section III*, then, focuses on the possibility that the market supports and is supported by a system of bourgeois virtues and that capitalism does not preclude nor contradict a spiritually fulfilling life. In *Section IV*, we extend her argument and claim that, in fact, the market is a moral teacher. *Section V* offers concluding remarks.

II. A new liberalism led to dramatic wealth

McCloskey contends that the Great Enrichment, the phenomenal and unprecedented economic growth of the past two centuries, was not due to an economic or material factor. Take, for instance, the factors commonly looked

at by economic historians. Foreign trade, literacy, coal, steam, property rights and population growth all did play a role in explaining the trajectory of the Great Enrichment since the eighteenth and nineteenth centuries in northwestern Europe. But, she explains, they could not fully explain the dramatic rise in real incomes. Foreign trade, aside from having been around throughout history, was too small at the time to explain the income growth. Changes in literacy rates as well as the use of coal and steam respond to changes in demand and, therefore, could not be causes. Property rights and other such institutions existed long before the Industrial Revolution and, in fact, existed in China before Europe. Population growth also occurred in other places and at earlier times. Most critically, other parts of the world were as rich as and even more scientifically sophisticated than Europe prior to the eighteenth century. As such, wealth and scientific advancement cannot be major sources of industrialization. Indeed, capital accumulation was commonplace around the world and too routine to explain the modern world.

Instead, McCloskey argues, a revolution in the rhetoric surrounding commerce and the bourgeoisie caused the Industrial Revolution. A change in the "habit of the lip" caused a great shift that gave birth to the industrialization (McCloskey 2010, 7). Specifically, McCloskey (ibid., 25) argues,

> … the historically unique economic growth on the order of a factor of ten or sixteen or higher, and its political and spiritual correlates, depended on ideas more than on economics. The idea of a dignified and free bourgeoisie led to the ideas of the steam engine and mass marketing and democracy.

A rhetorical change, McCloskey explains, changed the world.[3] As she (ibid., 7) writes,

> … three centuries ago in places like Holland and England the talk and thought about the middle class began to alter. Ordinary conversations about innovation and markets become more approving. … In northwestern Europe around 1700 the general opinion shifted in favor of the bourgeoisie, and especially in favor of its marketing and innovating. … People stopped sneering at market innovation and other bourgeois virtues exercised far from the tra-

3 As Martin and Storr (2012, 787) write, "contrary to much of the literature on the relationship between discourse and social change which tends to focus on discourse as an artifact rather than a driver of change, we argue using examples from outside of economics and economic history that a change in talk not only tends to accompany and often precedes dramatic social transformation."

> ditional places of honor in the Basilica of St. Peter or the Palace of Versailles or the gory ground of the First Battle of Breitenfeld.

All of a sudden, or so it seemed, it became dignified to be a merchant. And, this dignity accorded to the bourgeoisie spurred innovation and dramatic economic growth.

For much of history, both sociopolitical elites and the poor sneered at merchants and condemned commerce and the market. It was not unusual for the typical bourgeois to be depicted as a Godless, corrupt individual to whom promises and moral duties were lost and "to whom going to Hell is equivalent to not making money" (Carlyle 2014, 361). Market activity was believed to be morally suspect and certainly was not believed to be admirable. But, a series of happy accidents in the form of the Renaissance, Revolts and Revolutions brought about the Bourgeois Revaluation. This was an era which McCloskey identifies by a change in rhetoric induced by liberal ideas, "an attitude toward life and society based on tolerance and coexistence, on respect for the rich history and unique experiences of different cultures, and on a firm defense of liberty" (Vargas Llosa 2008, 68). This Revaluation in the eighteenth century in northwestern Europe shifted societal perspective from damning to admiring the bourgeoisie and their activities. The bourgeoisie were, thus, empowered with a new sense of respect for their activities and innovations, which brought about the "gigantic material enrichment of the modern world," and, in turn, permitted "lives of greater spiritual and intellectual scope for the poorest among us" (McCloskey 2010, 86).

McCloskey argues that giving the bourgeoisie liberty and dignity were both necessary conditions for the modern world. But, while both were necessary, the dignity was something entirely new at the time. Admittedly difficult to disentangle, liberty concerns the laws that constrain merchants' activities and innovation while dignity involves the opinions about the merchants held by others in society. "[W]ithout the new dignity for merchants and inventors," McCloskey (ibid., 396) explains, "no amount of liberty to innovate would have broken the old cake [of custom], either." Merchants would have been little motivated to engage in the process and product of innovation if they continued to lack the respect and honor – or, rather, continued to be treated as social low-lives – from other members of society. Likewise, "[w]ithout the liberty to innovate, no amount of new social prestige for the previously scorned bourgeoisie would have done the trick" (ibid., 395). The economic transformation that occurred over the last two centuries would not have happened, even if the merchants obtained the noble

and aristocratic statuses in the eighteenth century, had the merchants lacked the ability to profit from their business endeavors. At the time, for instance, France required its merchants to apply for permission to open factories and essentially did not give entrepreneurs complete liberty to innovate as occurred in Britain and Holland. This (albeit partial) constraint on innovation meant that France was slower to enjoy the level of material development that Britain and Holland were enjoying during that period.

The Great Enrichment required granting the bourgeoisie liberty (by not overtaxing and overregulating them) and dignity (by honoring their activities). As McCloskey argues, however, it is not just that a bourgeois life came to be viewed as dignified. She is not celebrating the widespread adoption of a false consciousness amongst ordinary people about the nature of life in a commercial society. Instead, she argues that a bourgeois life deserves to be viewed as an ethical life.

III. A good life in commercial society

Market activity has almost always been viewed as morally questionable. Market exchanges, it is widely believed, can actually taint the goods and services being traded within them. So, the kidney given away for free to a dying man is viewed as virtuous but the kidney sold to a dying man is viewed as repugnant. Similarly, it is widely believed that engaging in market transactions can morally taint market participants. Markets, goes this view, promote materialism, reward selfishness and encourage greed.

That markets are morally problematic is certainly the view of many market critics. Aristotle, for instance, condemned the pursuit of wealth through the market despite his celebration of prudence. For Aristotle (1941, 1141), "there are two sorts of wealth-getting … one is a part of household management, the other is retail trade: the former necessary and honorable, while that which consists in exchange is justly censured; for it is unnatural, and a mode by which men gain from one another." Gaining through retail trade, according to Aristotle, necessarily involves taking advantage of others. Concerns about usury and calls by Aquinas and others for a just price spoke to this belief that the only way that you can gain through trade is to engage in fraud or to take advantage of people's needy conditions. Indeed, Aquinas (1918) explicitly condemned arbitrage. "It is contrary to justice," he (ibid., 326) explains, "to sell goods at a higher price than their worth, or to buy them for less than their value … If you sell a thing for a higher price

than you paid for it, you must either have bought it for less than its value, or sell it for more than its value. Therefore this cannot be done without sin." Marx, likewise, worried that markets were inherently alienating and exploitative. As Marx (1975, 225) wrote, the more developed the market, "the more egotistical, asocial and estranged from his own nature does man become."

More recent critiques have echoed these concerns. Sandel (2012, 7), for instance, worries about the expansion of the market and its values into "spheres of life where they don't belong." There are at least two reasons, he explains, that we should dread a society where everything is for sale. First, market exchanges are inherently unfair. The more things that can and must be bought in the market, the more wealth matters, the more unfair life is for those of modest means. Second, charging a price for something can corrupt that object. Once something is for sale we view it differently; it comes to mean something different than it did before. Markets, Sandel (ibid., 9) explains, "don't only allocate goods; they also express and promote certain attitudes toward the goods being exchanged."[4] In this way, market values, particularly as markets expand into more and more areas, can crowd out nonmarket virtues. As Sandel (ibid.) summarizes, "economists often assume that markets are inert, that they do not affect the goods they exchange. But this is untrue. Markets leave their mark. Sometimes, market values crowd out nonmarket values worth caring about."

Not only do market critics highlight the morally problematic aspects of markets, market apologists have also suggested that markets are opposed to or undermine virtues. For instance, Mandeville (1988) in the *Fable of the Bees* argued that human desires led to private vices like greed but that the market converted these private vices into public benefit. Moreover, Mandeville suggested through his poem that the public benefit we get from thriving markets actually depends on these private vices, to eliminate them is to eliminate markets. Similarly, Smith (1981, 782) worried that as the division of labor expanded in commercial society that the typical worker "generally becomes as stupid and ignorant as it is possible for a human creature to become.… The uniformity of his stationary life naturally corrupts the courage of his mind. … His dexterity at his own particular trade seems, in this manner, to be acquired at the expense of his intellectual, social, and martial virtues." For Smith, then, markets are both the reason that countries are wealthy and are also potentially corrupting.

4 Brennan and Jaworski (2015) have convincingly challenged this view.

But, our daily experiences suggest the contrary. If concerns about the market had been true, displays of trust and reciprocity, so commonplace, should not be norms in our economic interactions; traders would not seek out trustworthy partners and fraud would not be newsworthy; employers would not be surprised if their employees were dishonest; and theft should be rampant. But, as Akerlof (1970) showed, markets cannot survive if rampant dishonesty undermines the mechanisms for overcoming adverse selection. If the market truly corrupted relationships between market participants, consumers should have no qualms with purchasing mass-produced goods from sweatshops and from businesses that do not take responsibility for their impact on the environment and social well-being. But, businesses often do attempt to be socially responsible and consumers often are willing to pay a premium to deal with businesspeople that they believe to be ethical. Indeed, demonstrated preferences reveal that people refuse to cooperate with unreliable team members in the workplace and refuse to transact with dishonest trading partners.

The success of today's corporations depends on whether they promote a friendly work culture that boosts employee creativity and whether they voluntarily adopt business practices and initiatives that are socially responsible. For example, Google and Facebook are known for their unique corporate cultures that make their employees feel valued and respected. Similarly, Starbucks takes a comprehensive approach to ethical sourcing with their Coffee and Farmer Equity (C.A.F.E.) Practices, and Toms Shoes engages in charity work where the company donates a pair of shoes to children for each pair purchased. So, in our modern world, the omnipresence of the market and commercialism does not appear to have forced people to abandon their ethical beliefs, behavior and dignity.

McCloskey (2006) contends that capitalism requires and nurtures a virtuous life. As McCloskey (ibid., 28) explains,

> The richer, more urban, more bourgeois people, one person averaged with another, … have larger, not smaller, spiritual lives than their impoverished ancestors of the pastoral. They have more, not fewer, real friends than their great-great-great grandparents in 'closed-corporate villages. They have broader, not narrower, choices of identity than the one imposed on them by the country, custom, language, and religion of their birth. They have deeper, not shallower, contacts with the transcendent of art or science or God, and sometimes even of nature, than the super-

> stitious peasants and haunted hunter-gatherers from whom we all descend. They are better humans – because they in their billions have acquired the scope to become so and because market societies encourage art and science and religion to flourish and because anyway a life in careers and deal making and companies and marketplaces is not the worst life for a full human being.

On net, McCloskey claims, markets not only make us materially better off, they also make us morally better off.

McCloskey (ibid.) argues that capitalism promotes and relies on seven virtues: prudence, love, justice, faith, courage, hope and temperance. A virtue is "a habit of the heart, stable disposition, a settled state of character, a durable, educated characteristic of someone to exercise her will to be good" (ibid., 64). As she (ibid., 508) summarizes, "bourgeois virtues are merely the seven virtues exercised in a commercial society. They are not hypothetical. For centuries … in a widening array of places … we have practiced them. … 'Bourgeois virtues' is no contradiction. It is the way we live now, mainly, at work, on our good days, and the way we should, Mondays through Fridays." To be sure, bourgeois virtues are distinct from martial, cardinal and theological virtues. But, these are the virtues that are given life under modern capitalism.

Prudence is, arguably, the dominant bourgeois virtue. By prudence, McCloskey (ibid., 253-254) means "good judgment" or "practical wisdom." Prudence is different than book knowledge and is akin to common sense. It is the virtue connected with reasoning, planning, deliberating, calculating, analyzing and thinking creatively in the market and in all activity. Prudence is that virtue that encourages the entrepreneur to spot an opportunity to buy low and sell high. It is the virtue that pushes the producer to economize on costs and the inventor to dream up new projects and processes. Admittedly, prudence alone and unbalanced by any other virtues is not sufficient to guarantee that an individual will behave morally. A prudent social entrepreneur may discover and pursue efficient strategies for serving others. A prudent thief may adopt strategies that allow her to escape detection. If prudence alone governed the behavior of individuals in a marketplace, distrust, fraud, defection, cheap talk and other such undesirable activities would be prevalent just as market critics feared. Happily, other virtues balance prudence in bourgeois life.

In explaining how life in the market is good for everyone, McCloskey (ibid.) insists that love is key. One of the common charges against markets is that they

undermine social relationships and social solidarity. From a purely economic point of view, love is meaningless and only economically disadvantages those that display it. For McCloskey, however, love drives much of what occurs in markets. It is what inspires the entrepreneur to attempt to acquire a fortune and workers to show up to work every day to support their families. Love also extends to disinterested solidarity with other people. For example, in her perception, foreign trade expansion would not have occurred in the seventeenth century Europe without love. Love encouraged people to stop being calculating, to extend their trust beyond in-group members (defined by blood relation and religion) and to engage in commercial speech (to exchange market information and reputations). In doing so, merchants learned to trust strangers as honorary friends and develop and maintain market relationships. McCloskey strongly believes that capitalism permitted us to gain stronger social ties in the market compared to the past or to any other economic system. As she (ibid., 138) writes,

> … it's not the case that market capitalism requires or generates loveless people. More like the contrary. Markets and even the much-maligned corporations encourage friendships wider and deeper than the atomism of a full-blown socialist regime or the claustrophobic, murderous atmosphere of a 'traditional' village. Modern capitalist life is love-saturated. Olden life was not loving; communitarian life was not; and actually existing socialist life decidedly was not.

We just simply have more meaningful friends in a commercial society and, thus, the market does not undermine but instead supports social relationships. Moreover, as Solomon (1993, 104) argues, we socialize with our colleagues and are delighted to see our colleagues despite the dullness and stress of the work. Indeed, as Storr (2008) argues, the market is a social space where meaningful social bonds can and do develop.

There are other bourgeois virtues that guide and are reinforced by commercial exchanges. Faith is a backward-looking virtue that requires one to adhere to one's commitments and duty in the face of temptations and to trust that things will work out. Faith is what drives investors to continue to support a proven company going through a difficult period and encourages an inventor to continue to pursue a project despite obstacles. Hope, unlike faith, is a forward-looking virtue. Hope is what drives investors to support an unproven venture and what encourages inventors to attempt something never attempted before. It is clear

that if markets are to thrive, they require actors who have both faith and hope. Commerce also requires courage. It is needed when negotiating a difficult deal and when borrowing a large sum of money to support a risky venture or when introducing an innovative product. Temperance is the management of self and a balance of passions, whereas justice is the management of society and a balance of citizens (McCloskey 2006, 286). If markets are to flourish, market actors need to control their own passions and respect and enforce the rules; both internal and external constraints matter.

McCloskey emphasizes how there must be a *system of virtues*, not a single virtue, in operation in the bourgeois life. Unfortunately, because the clerisy derided the bourgeoisie for so long, "we lack a vocabulary for speaking of the virtues within this encompassing commercial, capitalist, bourgeois society" (McCloskey 1998, 301). But when alloyed with each other, these seven bourgeois virtues are what characterize life in commercial society.[5] In the regime of bourgeois virtues – a balance of all seven virtues as opposed to a single dominant virtue – the market encourages people to "put trust in strangers and bring them into the extended order of division of labor from which we benefit. Trust and friendship are both foundation of the market economy and the by-product of the expansion of the market economy" (Boettke 2007, 85). Life in the market, indeed, does not need counterbalancing to be morally and spiritually good; the market (and thus capitalism) *is* virtuous. As McCloskey (1998, 310) explains, "Who are depends on what we do, our ethics depend on our business. Commerce is a teacher other ethics."

IV. Markets as moral teachers

While McCloskey states that markets make us virtuous, she leaves much

5 This is not to deny that there are no bourgeois *vices*. Moreover, the bourgeois vices are not always balanced in all people at all times in commercial society. For instance, greed is a vice to prudence alone and a depravity because it is not balanced with the other virtues. Selfish individuals may succeed on some margins in the market, but will suffer from missed profit opportunities and lead unfulfilling lives. An interesting real world example of missed profit opportunities is Ingram and Roberts (2000) on losses hotel managers incur by not being friends with their competitors. Love alone could lead to the vice of lust, but alloyed with prudence evokes trust and reciprocity. Hope unrestrained by other virtues transforms a principled businessperson into a common street thug. A man with courage, without restraint of other virtues, is too easily swayed by pride, envy and greed. Justice, alone, can morph into anger but produces the bourgeois virtue of honesty combined with faith and courage.

unexplained about how markets make us virtuous. Market interactions have the ability to make us more virtuous through at least two mechanisms. First, every market transaction is an opportunity to discover market participants who have the moral qualities that humans admire. Second, markets allow us to reward market participants with the ethical qualities we appreciate and to punish those who behave viciously.

The market is a social space where conversations beyond simple negotiations occur (Storr 2008). Colleagues and business partners often spend considerable amount of time getting to know each other both within and outside the office. As Smith (1976, 223-224) wrote, "the necessity or convenience of mutual accommodation very frequently produces a friendship not unlike that which takes place among those who are born to live in the same family. Colleagues in office, partners in trade, call one another brothers; and frequently feel towards one another as if they really were so." It is not uncommon for commercial friendships to morph into relationships characterized by meaningful social bonds. This deepening of market relationships is only possible because markets allow us to learn about the characters of our trading partners.

Elsewhere, we explore how the market allows us to discover the ethical characters of others. The market, we contend, acts as a discovery process for trust and trustworthiness (Choi and Storr 2016b, 2016c, 2016d). Although we only focus on two virtues, our interpretation of the market as a moral discovery process is applicable to all bourgeois virtues. Building on notions of markets as dynamic and interactive spaces (Hayek 1945), markets as a social and moral spaces (Storr 2008, 2009), and markets as conveyors of inarticulate knowledge (Lavoie 1986), we describe how the market allows trustworthy partners to locate one another. Moreover, we explore how the market allows people to discover untrustworthy partners and to avoid future interactions with them. Our premise is that people are presented with opportunities to exploit each other with each and every market transaction. Consequently, a person can conclusively distinguish between a trustworthy and an untrustworthy partner by whether or not that partner engages in fraud or theft. As the choice to engage in opportunism is a deliberate decision, it leaves no uncertainty about the type of person with whom the involved parties are interacting. In a hostile market environment where deceitful behavior is rampant, a virtuous individual will receive poignant attention. In the opposite environment (i.e. within well-functioning markets), the unethical individual will receive this attention. In this perspective, each consecutive confirmation of a successful

market interaction will reveal to individuals whom to trust (or to avoid) and teach them to act virtuously towards each other through repeated interactions.

The market in the real world is not static. Markets are complex and learning about market participants also occurs in other ways. Over time, we have evolved reputation and rating systems that communicate reputations of individual vendors. As consumers, we vet reputation by referring to credible sources before committing to transactions with unknown sellers and firms. As sellers, we inquire about the reputation of potential partners by asking for past references and seeking informal reports from close associates. Whether as consumers or as sellers, we prefer to choose the best people for the job – those who exhibit principled behavior and with whom we could work if a conflict or problem was to arise. These information-sharing methods raise the stakes for unethical individuals. When individuals behaved improperly in one-on-one interactions (as in Choi and Storr 2016b and Choi and Storr 2016c), their partners could not share that information with one another and information about their conduct was "contained" within each partner. In real world markets, people will tend to share this information with one another. Business partners inquire about potential partners and volunteer referrals based on what they have discovered through their market experiences. It would be unrealistic for the unethical businesspeople to expect their conduct to not be shared in such a context.

People can now easily share their experiences and opinions of past and current partners with a large group of individuals (e.g. through reviews on websites). For the ethical, reputation and rating systems reduce the cost of dealing with marginally less than stellar individuals. For the unethical, it even further raises the stakes of being caught or known for unscrupulous behavior. And, if we mistakenly placed our trust in a swindler or just simply misread someone, the market developed instruments such as insurance to reduce our cost of experiencing betrayal. These instruments allow us to take risks while we learn.

Markets allow us to reward market participants who exhibit the bourgeois virtues and to punish those who display the bourgeois vices. The idea that good conduct matters in the market is called the doux-commerce thesis. Smith (1982b) raised the possibility that the market teaches individuals to act with honor. "Of all the nations in Europe," Smith (1982a, 538) observed, "the Dutch, the most commercial, are the most faithful to their word" and "whenever commerce is introduced into any country, probity and punctuality always accompany it." We tend to be egocentric as human beings, discussed Smith, so our interactions and

conversations with friends and strangers put our own struggles and successes into perspective. In other words, our sociality modulates our behaviors and attitudes. Commercial society brings people (even strangers) into conversation with one another. "Society and conversation," for Smith (1982b, 23), "are the most powerful remedies for restoring the mind to its tranquility." Hirschman (1992, 109) echoed this sentiment and argued that commerce is a "powerful moralizing agent which brings many nonmaterial improvements to society even though a bit of hypocrisy may have to be accepted into the bargain." Samuel Ricard, quoted by Hirschman (2013, 217-218), likewise explained how commerce has an ability to make individuals humble. As Ricard explained,

> Through commerce, man learns to deliberate, to be honest, to acquire manners, to be prudent and reserved in order to succeed, he feels vice, or at least his demeanor exhibits the part of present and future acquaintances; he would not dare make a spectacle of himself for fear of damaging his credit standing which it might otherwise have to deplore.

The market for Smith and Hirschman is a moral teacher.

Although not explicitly concerned with the doux-commerce thesis, Greif (1993) documents how a market institution affects individual behavior, business practices and social structure. The Maghribi traders in pre-modern international trade faced an agency problem. It was efficient for merchants to hire agents to deliver goods to their trading partners abroad, but they faced the risk of the agents acting opportunistically and embezzling their goods. The Maghribi traders were able to overcome this agency problem by setting up an institution (which Greif called the coalition) that monitored the traders and their agents, regulated their pay and facilitated information sharing amongst its members. By being trustworthy and acting with honor, the member agents benefited from higher wages compared to non-member agents and earned repeat business within this institution. These traders exemplified how the market, left untethered, overcomes problems and how the market could act as a space where people learn to mimic virtuous behavior.

Capitalism systematically rewards honest, fair, civil and compassionate business behavior (Mueller 1999, 5). For this reason, the market is fairly good at inspiring virtuous behavior. Entrepreneurs assess their partners' characters and personalities by observing and judging their offer-making strategies, their communication and demeanor within and outside the negotiations and other

business-related processes. These interactions reveal information about related-parties to each other. Entrepreneurs and businesspersons, then, adjust their expectations, actions and decisions to continue (or discontinue) partnerships with particular partners. This cycle of readjustments not only affects the profitability of that specific business relationships, but also the opportunities to build new relationships through referrals. How a businessperson conducts herself could determine whether or not she is recommended to others by her partner and, thus, could define her future business opportunities.

In systems with well-functioning institutions such as capitalism, our own behavior and the behavior displayed by our friends and acquaintances are improved through this process of rewarding one another with future business for positive interactions and sanctioning one another for negative business interactions. Economic studies on social network, labor economics and education speak about externalities in terms of peer effects on outcomes (Sacerdote 2001, Mas and Moretti 2009, Christakis and Fowler 2011). In contexts where it is normal to see our high expectations met, we are sensitive to disappointments and moral transgressions. News of profits and losses hardly makes ripples in the business world, but news (and rumors) of betrayal and dishonesty disseminate very quickly. Because entrepreneurs within the competitive market process face incentives to distinguish themselves on both price and non-price margins, even the most prudent individuals will invest in building and maintaining social networks through goodwill and good customer service. They will also try to become authentically good in their interactions. Knowing that individuals prefer to repeat interactions with those who are unlikely to engage in fraud or theft and who are more likely to work towards mutually beneficial outcomes in the long run, game theoretic predictions tell us that unethical businesspeople will be lured by the larger expected profitability associated with being virtuous and will mimic the behavior of the ethical businessperson. While this mimicry may succeed at first, disingenuous individuals are rarely successful at impersonating authentically good people. It is surprising how perceptive we are regarding those who wish to deceive and cheat us. As such, the market weeds out unethical businesspeople and encourages its participants to practice the bourgeois virtues.

Contrary to the fears of market critics, the manner in which the market operates encourages virtuous behavior and ensures that unethical behavior is held in check in at least two ways. Market mechanisms reveal and share information about the moral character of business actors. Market mechanisms also reward and

punish business actors depending on their moral characters. As Langrill and Storr (2012, 357) stated, "markets increase the benefit of being virtuous and lower the costs of doing so. As we would expect, there is more virtue than there otherwise would be." Hence, markets, left to their own devices, not only achieve efficient and optimal allocation of goods, they also help us maintain our morality.

V. Conclusion

In explaining the Industrial Revolution, past economic historians have focused on economic factors such as foreign trade, literacy, coal, steam, property rights and population growth. McCloskey contends that these factors have been present long before the industrialization or are too minor to fully explain the Great Enrichment on their own. Instead, she argues, ideas were the catalyst to the Great Enrichment. A combination of numerous happy accidents in history set the stage for the Great Enrichment and, thus, the modern world to happen. The economic liberty to pursue innovations (which existed long before the Great Enrichment in Western Europe) was matched with change in rhetoric surrounding commerce empowered the bourgeoisie with newfound dignity for their work. The Great Enrichment occurred because the bourgeoisie were given the liberty to innovate and dignity (by honoring their activities).

But, it is not just that a bourgeois life came to be viewed as dignified, a bourgeois life also became an ethical life. As McCloskey (1998, 310) eloquently argued, "who we are depends on what we do, our ethics depend on our business. Commerce is a teacher of ethics. The growth of the market promotes virtue, sometimes." Markets not only made us materialistically richer, they also made us morally richer. Yet, in her argument, McCloskey is sparse in explaining how the market and capitalist force would make people more virtuous. Here, we extended her arguments to explain how markets actually train us to be virtuous.

Why some nations are rich and some nations are poor are the key questions at the heart of economics since at least Adam Smith's *The Wealth of Nations*. Since then, there has been a general consensus amongst economists that Smith's formula of "peace, easy taxes and the tolerable administration of justice" is what is required for nations to escape poverty. In her Bourgeois Trilogy, McCloskey argues persuasively that more is needed, that extending bourgeois liberty and celebrating bourgeois dignity are essential to raise the livelihoods of the three billion people – nearly half the world's population – who live on less than $2.50 per day.

Her message on the importance of not only extending bourgeois liberty but also celebrating bourgeois dignity is all the more important as over three billion people – nearly half of the world's population – live on less than $2.50 a day. We agree with McCloskey that, in order for nations to grow rich, entrepreneurs must be given the freedom to innovate and ordinary citizens to live dignified lives in the moral world of markets.

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Heeding McCloskey and Ziliak While Defending the F (as well as the D– and the F+)

Bob Elder[1]

Introduction

In *The Cult of Statistical Significance: How the Standard Error Costs Us Jobs, Justice, and Lives*, Deirdre McCloskey and Stephen Ziliak champion *economic* significance, highlight the importance of size, and advocate guidance from loss functions. They lament rote testing for *statistical* significance and the consequent focus on *whether* an effect exists at the expense of gauging *how much* effect there is and evaluating implications for policy or other ensuing action. In their book and other venues of commentary, McCloskey and Ziliak lobby against the mechanical use of t-tests, and they despair over the significant-insignificant dichotomy that obscures all else when the yes-no outcomes of these tests are viewed as the end of the story. They argue that the star of the show is the magnitude of β, the size of the effect that one economic variable is estimated to exert on another, and not α, the level at which this effect may or may not be deemed statistically significant.

In the paragraphs that follow, I heed McCloskey and Ziliak's call for loss functions. I provide an initial example of a loss function, and then I discuss the use of loss functions to estimate β. This will transition into a defense of the F-statistic. As I defend the F, I tread on thin ice: although McCloskey and Ziliak highlight t-tests as their chief villain, F-tests culminate in the same binary adjudication of statistical significance as t-tests. This essay will defend *incremental* F-tests (not *global* F-tests), and the central defense of the *incremental* F-statistic will occur

1 Bob Elder is the Allen-Bradley Endowed Chair in Economics, and Chair of Department of Economics, Beloit College.

through the characterization of this F-statistic as a loss function itself.

Indeed, the use of this F-statistic as a loss function for comparing losses is the penultimate step that will be taken before reflecting on the size of β and heeding McCloskey and Ziliak's call to address the question of how big is big. McCloskey and Ziliak suggest that we can address this question by assessing implications for policy or other human behavior: "Our main point … is that 'significance' itself is something that needs to be argued in the context of the scientific or policy issue and cannot be determined on statistical grounds alone." (Ziliak and McCloskey 2004, 668)

Thus, I will conclude with two examples, one interpreting decisions made by a president in an environment of uncertainty, and the other describing decisions that professors make on the basis of available data. The first example concludes with a report from a president 54 years ago today, and the second example ends this essay on a more light-hearted note by defending the D– and the F+ as well as the F.

Constructing a Loss Function: An Initial Example

To demonstrate the construction of a loss function, let us recall the series of laws that run from the Federal Reserve Act of 1913 to the Employment Act of 1946 to the Federal Reserve Reform Act of 1977 to the Full Employment and Balanced Growth Act of 1978. These laws combine to establish goals of full employment and price stability for monetary and fiscal policymakers to pursue. Consequently, these goals give policymakers the incentive to monitor unemployment rates (u) and inflation rates (π).

To pursue full employment, suppose that policymakers target an unemployment rate of around 5% $(u_{target} = 0.05)$, and to pursue price stability, suppose that policymakers target an inflation rate of around 2% $(\pi_{target} = 0.02)$. To assess how well policymakers perform with regard to their so-called "dual mandate" for full employment and price stability, we could construct a loss function as follows:

$$Loss = (u - 0.05)^2 + (\pi - 0.02)^2$$

By squaring the deviation between each policy variable and its target, we ensure that any off-target outcome yields a positive loss: errors on the low side, when squared, yield positive losses, just like mistakes on the high side. A "positive loss" may sound like an oxymoron, so let us emphasize that the overall goal of pol-

icymakers is to *minimize* losses. Let us also note that loss minimization is not just a game played by policymakers; econometricians also engage in the business of loss minimization when they estimate relationships between economic variables.

Least Squares Estimation: Minimization of a Loss Function

The word *variable* suits unemployment and inflation well, because both of these rates *vary*. In general, we measure the *total variation* of any given *variable* Y by summing the squared deviations between each of its observations Y_i and its mean $\bar{Y}$. Thus, the total variation of a variable such as Y is also called its Total Sum of Squares (TSS):

$$Total\ Variation\ of\ Y = TSS = \sum_{i=1}^{n} (Y_i - \bar{Y})^2$$

Econometricians try to explain as much of this variation as possible. Since the total variation of Y is its Total Sum of Squares (TSS), the part of this total variation that econometricians do explain can be called the Explained Sum of Squares (ESS), and the part of this total variation that econometricians fail to explain can be called the Unexplained Sum of Squares (USS):

$$TSS = ESS + USS$$

$$(Total\ Variation = Explained\ Variation + Unexplained\ Variation)$$

How do econometricians try to *explain* the variation of a variable such as Y? They consult their underlying economic theory, and theory can suggest potential *explanatory variables* such as X_1. If theory suggests a linear relationship between Y and X_1, then econometricians may specify a model such as the equation shown below.

$$Y_i = \beta_0 + \beta_1 X_{1i} + u_i$$

In this equation, inclusion of the error term u_i acknowledges that part of Y can be subject to random disturbances that are independent of any explanatory variable such as X_1. Thus, any given observation Y_i breaks down into a *systematic* component $\beta_0 + \beta_1 X_{1i}$ and an *unsystematic* component u_i.

In their efforts to explain as much of the total variation in Y as they can, econometricians focus on the part of Y that behaves systematically. This requires them to estimate values of β such as the vertical intercept β_0 and the slope coefficient β_1. The estimates themselves are denoted with hats, and when combined with any observation on the explanatory variable X_1, they estimate a fitted value for Y that also is denoted with a hat:

$$\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 X_{1i}$$

Given a sample of n different observations on the explanatory variable X_1, this equation generates n different fitted values $\hat{Y}_i$. The sum of squared deviations between each of these n different fitted values $\hat{Y}_i$ and the mean $\overline{Y}$ emerges as the econometrician's explained variation of Y, which also can be called the Explained Sum of Squares (ESS):

$$Explained\ Variation\ of\ Y = ESS = \sum_{i=1}^{n} \left(\hat{Y}_i - \overline{Y}\right)^2$$

Since the part of each actual observation Y_i that econometricians do explain is determined by each fitted value $\hat{Y}_i$, the part of each actual observation that econometricians fail to explain is $Y_i - \hat{Y}_i$. In turn, the sum of squared deviations between each actual observation Y_i and each fitted value $\hat{Y}_i$ gives the unexplained variation of Y, or the Unexplained Sum of Squares (USS):

$$Unxplained\ Variation\ of\ Y = USS = \sum_{i=1}^{n} \left(Y_i - \hat{Y}_i\right)^2$$

Econometricians seek to do as good a job as possible. Thus, they minimize the part of the total variation of Y that they fail to explain. In particular, therefore, they minimize the unexplained variation of Y by minimizing the unexplained sum of squares shown above. If we like, we can express this unexplained sum of squares in a little more detail as follows:

$$USS = \left(Y_1 - \hat{Y}_1\right)^2 + \left(Y_2 - \hat{Y}_2\right)^2 + \left(Y_3 - \hat{Y}_3\right)^2 + \cdots + \left(Y_{n-2} - \hat{Y}_{n-2}\right)^2 + \left(Y_{n-1} - \hat{Y}_{n-1}\right)^2 + \left(Y_n - \hat{Y}_n\right)^2$$

This sum of n squared deviations reminds us of the sum of *two* squared deviations that we saw earlier: $Loss = (u - 0.05)^2 + (\pi - 0.02)^2$. Like this sum of *two* squared deviations, the sum of n squared deviations shown above is a loss func-

tion. And just as policymakers strive to minimize a *two*-part loss function in pursuit of their *dual mandate* for full employment and price stability, econometricians seek to minimize an n-part loss function in pursuit of their goal to explain as much as possible of the variation in a variable such as Y.

To see how econometricians minimize this loss function given by the unexplained variation $Loss = USS = \sum_{i=1}^{n}(Y_i - \hat{Y}_i)^2$, recall that each $\hat{Y}_i$ is determined by the equation $\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 X_{1i}$. Thus, econometricians solve for estimates of the vertical intercept $\hat{\beta}_0$ and the slope coefficient $\hat{\beta}_1$ that minimize the variation of Y that they leave unexplained in the loss function shown below:

$$Loss = USS = \sum_{i=1}^{n}\left(Y_i - \left(\hat{\beta}_0 + \hat{\beta}_1 X_{1i}\right)\right)^2$$

Choosing $\hat{\beta}_0$ and $\hat{\beta}_1$ to minimize this loss is a calculus problem that is solved by satisfying the first-order conditions $\frac{\partial USS}{\partial \hat{\beta}_0} = 0$ and $\frac{\partial USS}{\partial \hat{\beta}_1} = 0$. Since the Unexplained Sum of Squares is minimized by the values of $\hat{\beta}_0$ and $\hat{\beta}_1$ that simultaneously satisfy the two equations $\frac{\partial USS}{\partial \hat{\beta}_0} = 0$ and $\frac{\partial USS}{\partial \hat{\beta}_1} = 0$, these solutions for $\hat{\beta}_0$ and $\hat{\beta}_1$ are obtained by a *least squares* procedure.

Having obtained $\hat{\beta}_0$ and $\hat{\beta}_1$, we can heed McCloskey and Ziliak by considering their size. But let us also emphasize that we've been heeding McCloskey and Ziliak from the very start, by minimizing a loss function in order to obtain these *least squares* magnitudes for $\hat{\beta}_0$ and $\hat{\beta}_1$ in the first place.

As we address a question such as how big is the effect of X_1 on Y, we reflect on the numerical value of $\hat{\beta}_1$, and to bear in mind what is it stake, we can use yet another loss function. The appropriate loss function at this point in the analysis depends on the larger question to be decided. Did we obtain $\hat{\beta}_1$ to help us decide whether to recall the Galaxy Note 7, to help us decide whether to get a flu shot, or to help us decide the best time to rake the leaves? There is an appropriate loss function that can help us weigh each of these questions, and along the way toward formulating our answers, each appropriate loss function helps us to place the size of $\hat{\beta}_1$ into perspective.

Paraphrasing JFK: Ask First How Many Betas, Ask Next How Big is Each Beta

Our quest to analyze sizes of effects, guided from the start by theory and loss functions, does not stop here. Before we can gaze upon a loss-function minimizing value of β such as $\hat{\beta}_1$ and begin to analyze *how much* X_1 affects Y, we first must ask *how many betas* we should estimate.

We drew upon economic theory to specify the initial model $Y_i = \beta_0 + \beta_1 X_{1i} + u_i$, but there may be alternative economic theory suggesting that Y depends on not just one but instead two different explanatory variables. With two competing theories to consider, we ask whether we should estimate another β, namely β_2, which would be the coefficient of a second explanatory variable, namely X_2. In other words, should we work with the model

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$$

or should we work with the model

$$Y_i = \beta_0 + \beta_1 X_{1i} + u_i$$

This is an important question, because our *least squares* estimate $\hat{\beta}_1$ will take on one numerical value as it plays its part in the simultaneous satisfaction of the two first-order conditions $\frac{\partial USS}{\partial \hat{\beta}_0} = 0$ and $\frac{\partial USS}{\partial \hat{\beta}_1} = 0$, and our *least squares* estimate $\hat{\beta}_1$ will take on yet a different numerical value as it plays its part in the simultaneous satisfaction of the three first-order conditions $\frac{\partial USS}{\partial \hat{\beta}_0} = 0$, $\frac{\partial USS}{\partial \hat{\beta}_1} = 0$, and $\frac{\partial USS}{\partial \hat{\beta}_2} = 0$.

Which of these two *least squares* estimates of $\hat{\beta}_1$ is the *least squares* estimate of $\hat{\beta}_1$ whose size will become the focus of our further analysis? This question acknowledges that we only arrive at a particular $\hat{\beta}_1$ of interest after we *control* for the effects of other variables (for example, X_2) that could help us to explain the variation in Y.

Constructing a Loss Function for Selecting Between Models

We do not really select between two different values of $\hat{\beta}_1$ so much as we select between the models in which they are estimated. And to select between models, we call upon yet another loss function. To keep our motivations clear,

let us construct this new loss function piece-by-piece. Let us also reiterate our unswerving motivation: always and everywhere, we seek to minimize the part of the variation in Y that we leave unexplained. Thus, we pursue loss-minimization with every step we take. To keep our discussion organized, let us give names to our two alternative equations as follows:

Unrestricted Model

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$$

Restricted Model

$$Y_i = \beta_0 + \beta_1 X_{1i} + u_i$$

This nomenclature keeps us organized as we note that the *restriction* $\beta_2 = 0$ is what transforms the *unrestricted* model into the *restricted* model. To select between the two models, we therefore test the restriction $\beta_2 = 0$. And as we test this restriction, we maintain our unswerving commitment to loss-minimization by monitoring the unexplained variation of Y.

As we monitor USS, we first must acknowledge that as we use more explanatory variables (e.g., X_1 and X_2 instead of only X_1), we inevitably explain more of the variation in Y. In terms of our loss function, we therefore leave less of the variation of Y unexplained in the unrestricted model than we leave unexplained in the restricted model: $USS_U < USS_R$.

Before we succumb to the temptation to specify a model that mindlessly throws the entire kitchen sink full of explanatory variables $X_1, X_2, X_3, \ldots, X_{ad\ nauseum}$ at Y at , let us put the difference between the Unexplained Sum of Squares from an unrestricted model and the Unexplained Sum of Squares from a restricted model into proper perspective. Notice that the first piece of this new loss function differs slightly from the loss functions we've seen so far: in the loss equation below, we see not a sum of squared deviations, but instead a difference between two sums of squared deviations.

$$Loss = USS_R - USS_U$$

This difference captures the loss we incur if we impose the restriction $\beta_2 = 0$. This restriction takes us from two explanatory variables (X_1 and X_2) to just one (X_1), and $USS_R - USS_U$ quantifies the resulting loss in terms

of increased unexplained variation. So how do we judge the size of this loss $USS_R - USS_U$? Is it an acceptable loss that frees us to discard X_2, so that we can adhere to X_1 as our sole explanatory variable and congratulate ourselves for not hurling a second utensil from the kitchen sink at Y? Or is it an unacceptable loss that requires us to keep X_2, thereby controlling for the effect of X_2 on Y in order to estimate an analyzable value for $\hat{\beta}_1$?

Our first step toward gaining additional perspective on the loss $USS_R - USS_U$ is to gauge it relative to this lower unexplained variation USS_U that we would achieve if we eschew the restriction $\beta_2 = 0$:

$$Loss = \frac{USS_R - USS_U}{USS_U}$$

Before we ask how big is this loss, we must note that further scaling is in order. We seek a loss function that makes its comparison on a level playing field. To demonstrate the importance of a level playing field, suppose that we sought to gauge the loss in output that Luxembourg incurs relative to China.

Digression: Evaluating Luxembourg's Loss Relative to China on a Level Playing Field

Luxembourg's output (or real GDP, denoted by $RGDP_L$) is a lot less than China's (denoted by $RGDP_C$), and an initial loss function for Luxembourg might be adapted from the loss function shown above.

$$Loss = \frac{RGDP_C - RGDP_L}{RGDP_L}$$

Such a ratio would be very large, but we quickly would agree that the size of this ratio emerges from the massive disparity between the populations of these two countries. Hence we put additional perspective into place by introducing per capita measures as follows:

$$Loss = \frac{\frac{RGDP_C - RGDP_L}{n_C - n_L}}{\frac{RGDP_L}{n_L}}$$

With n denoting the number of people in each country, this loss function recognizes that the real GDP disparity $RGDP_C - RGDP_L$ stems primarily from

the fact that China has $n_C - n_L$ more people than Luxembourg. Thus, we begin to level the playing field by comparing Luxembourg's real GDP shortfall relative to its population shortfall in the ratio $\frac{RGDP_C - RGDP_L}{n_C - n_L}$, and we compare this to a corresponding per capita measure in the form of Luxembourg's real GDP per person $\frac{RGDP_L}{n_L}$.

But we can achieve even greater precision in our effort to quantify Luxembourg's output loss relative to China on a level ground. In particular, we should note that not all n people who live in a country are employed workers who contribute to the production of output. In any given country, there are k people who either are unemployed or not in the labor force, so these k people do not contribute to the production of output. Thus, real GDP is actually produced by the $n - k$ workers who are employed in the production of output. Let us therefore modify Luxembourg's loss relative to China once more:

$$Loss = \frac{\frac{RGDP_C - RGDP_L}{(n_C - k_C) - (n_L - k_L)}}{\frac{RGDP_L}{n_L - k_L}}$$

With $n - k$ denoting the number of workers employed in the production of output in each country, this loss function allows us to consider the real GDP disparity $RGDP_C - RGDP_L$ in light of the fact that China employs $(n_C - k_C) - (n_L - k_L)$ more workers than Luxembourg. We therefore compare Luxembourg's lost real GDP per lost worker $\frac{RGDP_C - RGDP_L}{(n_C - k_C) - (n_L - k_L)}$ to Luxembourg's real GDP per worker $\frac{RGDP_L}{n_L - k_L}$ in the loss function shown above.

The F-statistic: A Loss Function for Comparing Losses on a Level Playing Field

Applying this real GDP loss function to the econometric loss function that we were constructing prior to this digression, we obtain the loss function shown below.

$$Loss = \frac{\frac{USS_R - USS_U}{(n-k_R)-(n-k_U)}}{\frac{USS_U}{n-k_U}}$$

Instead of n denoting the number of people who live in a country, n now denotes the number of observations used to estimate an equation. And although $n_C \neq n_L$ because more people live in China than live in Luxembourg, we use the same quantity of observations n to estimate the restricted model as we do to estimate the unrestricted model: $n = n$, so here subscripts are no longer necessary. And since $n = n$, this loss function simplifies further as follows:

$$Loss = \frac{\frac{USS_R - USS_U}{(n-k_R)-(n-k_U)}}{\frac{USS_U}{n-k_U}} = \frac{\frac{USS_R - USS_U}{k_U - k_R}}{\frac{USS_U}{n-k_U}}$$

While the meaning of n has changed from the number of people in a country to the number of observations in a sample, what has happened to the meaning of k? During our digression, k denoted the number of people who were not employed in the production of output, and $n - k$ therefore denoted the number of workers who did produce output.

Similarly, within our sample of n observations there are k that are not free to work for us like the other $n - k$ are. In particular, for each β that we estimate, there is a constraint $\frac{\partial USS}{\partial \hat{\beta}} = 0$ that must be satisfied. And if we estimate k different values of β, we must satisfy k different equations of the form $\frac{\partial USS}{\partial \hat{\beta}} = 0$. This constrains k different observations to satisfy these k different equations. With k different observations devoted to the duty of satisfying k different constraints, any sample of n observations actually includes only $n - k$ unconstrained observations (or "free" observations).

Since these k different constraints yield k different parameter estimates, we also can think of k as the number of parameters to be estimated in any given

model. For example, the unrestricted model $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$ features $k_U = 3$ different parameters to be estimated, and the restricted model $Y_i = \beta_0 + \beta_1 X_{1i} + u_i$ features $k_R = 2$ different parameters to be estimated. Thus, the loss function we can use to test the restriction $\beta_2 = 0$ swings into action as follows:

$$Loss = \frac{\frac{USS_R - USS_U}{k_U - k_R}}{\frac{USS_U}{n - k_U}} = \frac{\frac{USS_R - USS_U}{3 - 2}}{\frac{USS_U}{n - 3}} = \frac{USS_R - USS_U}{\frac{USS_U}{n - 3}}$$

Each of these loss functions is an *F-statistic*. In general, $F = \frac{\frac{USS_R - USS_U}{k_U - k_R}}{\frac{USS_U}{n - k_U}}$ helps us to compare the unexplained variation USS_R in a restricted model with the unexplained variation USS_U in an unrestricted model, and it makes this comparison on a level playing field. McCloskey and Ziliak sprinkle haikus through their book on *The Cult of Statistical Significance*, so let us emulate this practice with a haiku here:

The F-statistic
is simply a loss function
for comparing losses.

Moreover, the F-statistic offers a comparison of a *minimum loss* with a *minimum loss*: recall that a *least squares* estimation procedure already has minimized the unexplained sum of squares USS_R (the variation left unexplained by the restricted model $Y_i = \beta_0 + \beta_1 X_{1i} + u_i$), and a *least squares* estimation procedure already has minimized the unexplained sum of squares USS_U (the variation left unexplained by the unrestricted model $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$).

To evaluate the restriction $\beta_2 = 0$ and select between these two models, the numerator of the F-statistic evaluates the loss from imposing this restriction (which is the increased unexplained variation $USS_R - USS_U$ that we experience by using one less explanatory variable) per restriction imposed (as we estimate one less parameter: $k_U - k_R = 3 - 2 = 1$). Then we compare this numerator of F, which is additional loss per restriction imposed $\frac{USS_R - USS_U}{k_U - k_R}$, with the denominator of F, which gives our loss per free observation $\frac{USS_U}{n - k_U}$ from the unrestricted model.

Nobel laureate Clive W.J. Granger and his Cal-San Diego colleague Graham Elliott appear to be on board with this. In a paper they presented at a sympo-

sium on McCloskey and Ziliak's work, Granger and Elliott made the following statement: "If one wanted to explicitly test an economic theory that said that a particular explanatory variable did not enter this equation then whether or not its parameter is zero is an appropriate question." (Elliott and Granger 2004, 550). In the preceding example, the question was whether X_2 entered the equation, and this was addressed by testing the restriction $\beta_2 = 0$. Moreover, we tested this restriction with an F-statistic, the loss function for comparing losses on a level playing field, and not a t-statistic, the signal-to-noise ratio that McCloskey and Ziliak warn against so persuasively.

In general, there could be yet another competing economic theory that suggests three explanatory variables and an unrestricted model such as $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + u_i$. Relative to the initial model $Y_i = \beta_0 + \beta_1 X_{1i} + u_i$, there would be two restrictions $\beta_2 = \beta_3 = 0$. In this case, the versatile numerator of the F statistic lets us evaluate the loss from imposing these two restrictions, which is the increased unexplained variation $USS_R - USS_U$, and on a per restriction basis this loss would become $\frac{USS_R - USS_U}{k_U - k_R} = \frac{USS_R - USS_U}{4-2} = \frac{USS_R - USS_U}{2}$. And again, we place this loss per restriction into perspective by comparing it with the denominator of the F-statistic, which gives the unexplained variation per free observation before restrictions are imposed.

Overall, debates in economic theory can lead to the specification of restricted and unrestricted models with one, two, three, or any amount of explanatory variables, and this general F-statistic stands ready to assist with model selection by keeping our eyes on the appropriate loss-per-capita measures in its numerator and in its denominator:

$$F = Loss = \frac{\frac{USS_R - USS_U}{k_U - k_R}}{\frac{USS_U}{n - k_U}}$$

$$= \frac{\frac{Additional\ Losses\ Incurred\ by\ Imposing\ Restrictions}{Number\ of\ Restrictions\ Imposed}}{\frac{Losses\ Incurred\ Before\ the\ Imposition\ of\ Restrictions}{Number\ of\ Free\ Observations\ used\ to\ Estimate\ the\ Unrestricted\ Model}}$$

Thus, the F-statistic facilitates a level-playing field competition between alternative economic theories. Loss-minimization remains the unswerving goal all along the way, from the least squares estimation that minimizes the unexplained variation USS in each model to the F-tests that place the loss we incur by impos-

ing restrictions $USS_R - USS_U$ into proper perspective as we select between models. No t-testing need ever occur.

Once a model has been selected, we can make the case that we have controlled for all pertinent effects, and we can look at the size of each β that has been estimated in the selected model. Such analysis can reveal what McCloskey and Ziliak call "oomph" as we evaluate the implications for policy or other ensuing action. And for perspective on policy or other ensuing action, we call upon loss functions for guidance yet again.

Such analysis seldom occurs at a higher level than the presidency or premiership of any nation. Here in the United States, analysis of the size of each pertinent β in the context of relevant loss functions was seldom more important than in the fall of 1962. The U.S. President at the time was John F. Kennedy, and JFK's October 22, 1962 speech is replete with discussions of the size of each pertinent β in the context of relevant loss functions. As he dealt with the Cuban Missile Crisis, JFK effectively anticipated guidance forthcoming from McCloskey and Ziliak decades hence. The happy consequence of JFK's prescience was affirmed 54 years ago today.

Heeding McCloskey and Ziliak: JFK did so 54 Years Ago

Fifty-four years ago today was November 2, 1962. On that day JFK went on radio and television to make the following report:

> My fellow citizens: I want to take this opportunity to report … that the Soviet missile bases in Cuba are being dismantled, their missiles and related equipment are being crated, and the fixed installations at these sites are being destroyed. (Kennedy 1962b)

Progress toward these good results began eleven days earlier, on October 22, 1962, when John F. Kennedy made a speech permeated by references to sizes of various effects and framed by perspectives afforded by implicit loss functions. It was as if JFK were channeling McCloskey and Ziliak, even though their emphases on the sizes of effects and the use of loss functions did not arrive until decades later.

For example, phrases that feature "oomph" start to flow as early as the very first paragraph of JFK's October 22, 1962 speech:

> This Government, as promised, has maintained the closest surveillance of the Soviet Military buildup on the island of Cuba. Within the past week, *unmistakable evidence* has established the fact that a *series of offensive missile sites* is now in preparation on that imprisoned island. The purpose of these bases can be none other than to provide a *nuclear strike capability against the Western Hemisphere.* (Kennedy 1962a; italics supplied)

Kennedy brings the sizes of the pertinent effects into focus with ensuing paragraphs such as the following:

> The characteristics of these new missile sites indicate *two distinct types* of installations. Several of them include *medium range ballistic missiles* capable of carrying a *nuclear warhead* for *a distance of more than 1,000 nautical miles*. Each of these missiles, in short, is capable of striking Washington, D.C., the Panama Canal, Cape Canaveral, Mexico City, or any other city in the southeastern part of the United States, in Central America, or in the Caribbean area.
>
> Additional sites not yet completed appear to be designed for *intermediate range ballistic missiles--capable of traveling more than twice as far*--and thus capable of striking most of the major cities in the Western Hemisphere, ranging as far north as Hudson Bay, Canada, and as far south as Lima, Peru.
>
> This urgent transformation of Cuba into an important strategic base--by the presence of these *large, long range, and clearly offensive weapons of sudden mass destruction*--constitutes an explicit threat to the peace and security of all the Americas … *Nuclear weapons are so destructive and ballistic missiles are so swift*, that any substantially increased possibility of their use or any sudden change in their deployment may well be regarded as a *definite threat to peace*. (1962a; italics supplied)

Given the sizes of these effects, JFK then turns to loss functions in order to place the situation into perspective. First, he faces the loss of nuclear war head-on:

> We will not prematurely or unnecessarily risk *the costs of worldwide nuclear war in which even the fruits of victory would be ashes in our mouth*--but neither will we shrink from that risk at any time it must be faced. (1962a; italics supplied)

As he compares the losses of alternative possible paths, Kennedy performs an implicit F-test in the paragraph below:

> My fellow citizens: let no one doubt that *this is a difficult and dangerous effort* on which we have set out. No one can see precisely what course it will take or what *costs or casualties will be incurred*. Many *months of sacrifice and self-discipline lie ahead*--months in which our patience and our will will be tested--months in which many threats and denunciations will keep us aware of our dangers. *But the greatest danger of all would be to do nothing.* (1962a; italics supplied)

In the end, JFK makes the point that sometimes we must incur high losses if we deem what's at stake to be even more valuable:

> The path we have chosen for the present is full of hazards, as all paths are--but it is the one most consistent with our character and courage as a nation and our commitments around the world. The *cost of freedom is always high*--and *Americans have always paid it*. (1962a; italics supplied)

The Cuban Missile Crisis called for evaluations of effect sizes and considerations of loss functions in the gravest of policymaking environments. So to end this essay on a more light-hearted note, let us consider how professors confront McCloskey-Ziliak "oomph" as they make decisions about grades at the end of each semester.

Heeding McCloskey and Ziliak at the End of Each Semester

As we consider how professors make decisions about grades at the end of each semester, our analysis moves from the stochastic to the *deterministic*. Professors *determine* letter grades for their students, and they base these determinations on the entire *population* of assignments given during the semester. Indeed, when professors distribute syllabi to students on the first day of each semester, these syllabi typically reference an equation that will determine each student's ultimate semester-long numerical score for the course.

Again, such equations are deterministic; they include no random disturbance term u_i. Equipped with the semester-long numerical score for the course yielded

by this deterministic equation set forth in the syllabus, each professor's ultimate decision involves the translation of this number to a letter. The table below shows the full set of letters from which professors can choose as they decide upon grades at Beloit College.

Letter Grades	Grade Points	Actual Deviation in Grade Points between Adjacent Letter Grades
A	4	$\frac{1}{3}$
A –	$3\ and\ \frac{2}{3}$	$\frac{1}{3}$
B +	$3\ and\ \frac{1}{3}$	$\frac{1}{3}$
B	3	$\frac{1}{3}$
B –	$2\ and\ \frac{2}{3}$	$\frac{1}{3}$
C +	$2\ and\ \frac{1}{3}$	$\frac{1}{3}$
C	2	$\frac{1}{3}$
C –	$1\ and\ \frac{2}{3}$	$\frac{1}{3}$
D +	$1\ and\ \frac{1}{3}$	$\frac{1}{3}$
D	1	$\frac{1}{3}\ (above), 1\ (below)$
	0	1

As professors reflect upon the translation of a semester-long numerical score into a final letter grade for the course, sometimes they find themselves on the borderline between two letter grades. The choice between these two letter grades can be influenced by considerations of size. In academia, each letter grade corresponds to a quantity of grade points, and the *actual deviation* between any pair of adjacent passing grades at Beloit College is always the same: $\frac{1}{3}$ of a grade point.

Let us pause here to note that this *actual* deviation is neither a *standard* deviation nor a *squared* deviation. It simply measures the actual distance that a professor must traverse in order to resolve a borderline quandary by selecting one

passing grade over another passing grade. And as long as the choice is between two passing grades at Beloit College, this actual deviation between adjacent grades remains constant at $\frac{1}{3}$ of a grade point.

This actual deviation does not hold constant after we reach the lowest passing grade of D. The next available grade at Beloit College is the failing grade of F. Any professors who find themselves on the "borderline" between D and F face a larger distance to traverse between the two adjacent grades. While the actual deviation between any two passing grades remains $\frac{1}{3}$ of a grade point, the journey from D to F is three times as large: 1 full grade point.

Here let McCloskey remind us that "a number is large or small relatively only to some standard … Nothing is large-in-itself. It is large … relative to something with which it can be interestingly compared." (McCloskey 1985, 201) For the 1 full grade point that quantifies the distance from D to F, there is but one relative standard for interesting comparison, and that is the $\frac{1}{3}$ of a grade point that quantifies the distance between all other pairs of adjacent grades.

Given this context, one full grade point packs the kind of wallop that McCloskey and Ziliak like to call "oomph." Such "oomph" can be daunting, and it is enough to give any professor pause. Any professor who decides against the D in favor of an F crosses more than a "borderline." Departing from the D and arriving at the F is a trip through a chasm three times as wide as any departure from one passing grade and arrival at the next passing grade. At three times the distance of any trip between pairs of adjacent passing grades, the journey from D to F can be viewed as two bridges too far.

Discussing the choice between awarding a D or making the oomph-atic statement of giving an F, two Economics Professors recently had the following exchange. For emphasis, let us be clear that *this conversation really happened*. One Econ Prof said "I wish we could give the D–." The other Econ Prof immediately replied "I wish we could give the F+." In addition to providing a good example of the kinds of things that Econ Profs say to each other, this exchange shows how considerations of size can induce potential policy innovations and affect human behavior.

Let us pause for just a moment to emphasize that this example does not seek to support any "rule of three." Indeed, let us heed McCloskey and Ziliak's point that "the sizeless stare originates with Pearson's rule of three." (Ziliak and McCloskey 2008, 199) Given the prevailing context and the application of judgement, a gap between adjacent grades that happens to be three times as large as all other

such gaps can be judged as "big," but using context and judgement to construe three as big does not rule out the assessment of 2.5 or 4 as "big" as well.

As McCloskey and Ziliak emphasize, size can inform policymaking. If academic policymakers worry about compression in the grades given by professors, they might consider removing any perceived impediment to giving the F. An increase in the incidence of giving the F would add dispersion to the grades awarded by professors, thereby combatting grade compression and helping grades to send signals with greater clarity. The addition of available *gradations* such as the D– and the F+ could increase dispersion, reduce compression, and clarify signals further.

But as things stand, the only trains headed southbound out of station D are Inter-Grade Expresses that travel non-stop to station F. The trip on the IGE from D to F is three times as long as any trip on local trains that link each pair of adjacent stations to the north, and this triple-sized distance includes more "oomph" than many professors wish to endure. So as the overseers of academic infrastructure monitor the behavior of professors who must travel between grades, they should not be surprised to observe the preponderance of ridership on those short commuter trains that serve stations north of D. If academic policymakers would like to see more business to the south, more infrastructure would help, such as new stations at D– and F+.

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Towards a Culturally-aware Economics

Laura E. Grube[1, 2]

1. Introduction

Deirdre McCloskey has argued that "Max U.," the character of economic analysis, offers an incomplete description of economic actors and an incomplete method with which to study economic behavior (see for instance, 2008, 2016b and throughout *The Bourgeois Era* trilogy, 2006, 2010, and 2016a). She explains, "I've written whole books, scores of professional papers… triumphantly concluding that all you need for historical explanation is 'maximum utility.' …But I was wrong. The economist's theory is not complete" (2006: 110).

Max U. exhibits prudence only, or "P-only," and ignores other important factors that influence behavior. He ignores, for example, "…S variables of speech, stories, shame, the Sacred" which operate in a particular context of "L variables," such as "the monopoly of violence by the state, the legal rules of the game, and the dance in the courts of law"(McCloskey 2016b: 4). Similarly, McCloskey explains, Max U. cannot incorporate ethics (except for prudence). Max U. is without love, hope, faith, courage, temperance, and justice. As she writes, economists have cast Max U. to create a predictable actor. "But the point is that the modern world was not predictable. It depended on the new and liberal notion of liberty and dignity, and their unpredictable results in betterment for all" (ibid.: 10). By neglecting the role of ethics, Max U. cannot contribute to our understanding or explanation of the Industrial Revolution, or other important economic and social change.

Max U. is also devoid of culture. Max U. is driven solely by (seemingly objective) cost-benefit calculations, absent of meaning or context. As Lavoie and

1 Laura E. Grube is Assistant Professor, Department of Economics, Beloit College.
2 Thank you to Virgil Storr for his comments on an earlier draft of this paper.

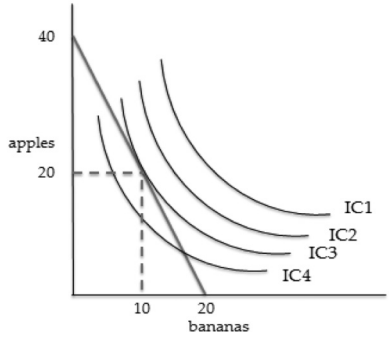
other Austrian School economists have argued, human beings are always operating within a context, and rely on past experience, knowledge, and beliefs in order to interpret the world and make decisions. Culture shapes what we see and do not see, constrains behavior (but is not fully binding), and provides points of orientation. Storr (2013) has suggested a few reasons why culture is difficult to incorporate into economics, pointing out that culture is neither homogenous (i.e. there is no single culture for a community, let alone a country) nor static (i.e. culture does change). Relatedly, culture is not a concept that lends itself to the use of numbers or mathematics. Even with these challenges, Storr (ibid.: 29) argues, "economists should pay attention to how culture would affect the actors in their models and how culture does affect the actors that they study." And, "[e]conomics is and should be recognized as a cultural science."

This paper builds off of McCloskey's critique of Max U. to show, first, that Max U. does not account for culture and, second, to illustrate what a culturally-aware economics looks like. In the next section, I describe Max U. and McCloskey's criticism of Max U. for being devoid of ethics. In section 3, I explain why it matters. Then, in section 4, I explain how Max U. is devoid of culture and argue that he should not be. Next, I put forth how we might study economics and recognize human decision-making as culturally embedded. Finally, I tie together the research programs of McCloskey and Lavoie (and his students') on the role of culture in economic action.

2. McCloskey is critical of Max U. for ignoring bourgeois virtues

First, *who is Max U.?* Max U., as constructed by neoclassical economists, is "utility maximizing only," or is singularly motivated to increase his level of total satisfaction. He is self-interested only. He is a lightening calculator, imputing marginal cost and marginal benefit, and ta-da, he has the decision. Take for example, the formula, $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$, which states that an individual should consume two goods, x and y, until the marginal utility derived from good x divided by the price of good x is equal to the marginal utility derived from good y divided by the price of good y. Or, the graphical analysis of constrained utility maximization (see figure 1.) Max U. consumes the bundle of goods – below, apples and bananas – that maximizes his utility subject to his budget constraint. The solution is the point of tangency between indifference curve 3 (IC3) and the bold line, his budget constraint.

Figure 1.



Silly economists, McCloskey says, don't they recognize that other things matter for real, human decision-making? For example, virtues, *bourgeois virtues*.

McCloskey defines virtue as "a habit of the heart, a stable disposition, a settled state of character, a durable, educated characteristic of someone to exercise her will to be good" (ibid.: 64). Ethics is a system of virtues. McCloskey focuses on seven virtues: Faith, Hope, Love, Justice, Courage, Temperance, and Prudence. The seven are, as she notes, a combination of "'pagan' virtues appropriate to a free male citizen of Athens … and the 'Christian' virtues appropriate to a believer in Our Lord and Savior…" (2006: 67). Her descriptor – bourgeois – is intended to present a seeming contradiction, or oxymoron. According to Marx, the bourgeoisie (i.e. the owners of the means of production) do not have virtue. To the contrary, the bourgeoisie are evil exploiters of the proletariat. McCloskey has a different view of the bourgeoisie, which she takes to be the middle class, as a group of individuals that are ethical and even improve their ethics as a result of capitalism (ibid: 22).

There are countless examples that suggest human beings rely on virtues to make decisions. As Frank Knight and Joseph Schumpeter have pointed out, entrepreneurs have courage to recognize and act on their new idea. Even if the entrepreneur is not the one to take on the financial risk associated with innovation, she most certainly exercises courage in voicing a new view and acting despite possible failure. To Max U., entrepreneurship is a cost-benefit analysis only. Similarly, Max U. has no use for faith. Faith is a steadfastness. Where Max U. recalculates and takes action, a person with faith returns to a friend and gives to a cause that seems unlikely to succeed. In chapter 6, "Sweet Love vs. Interest" (2006) McCloskey shows that Max U. is incapable of love, and she criticizes some economists'

attempts to include love in their analysis.

McCloskey is not interested to point out the character flaws of Max U. for the sake of pointing out character flaws. The important message in her argument is that by misrepresenting human behavior (as without virtue) economists cannot understand or explain important social phenomena.

3. McCloskey states that Max U. should be abandoned because he cannot explain current economic life or social change. However, she does not construct a Max U. to address ethics

Further, efforts to incorporate bourgeois virtues into maximum utility thinking fail. As McCloskey notes, "A Samuelsonian economist will say, 'It's easy to include love in economics…'" (ibid.: 108). And, this is how you do it: $Utility_{lover}\ (Stuff_{lover}, Utility_{beloved})$. Using this method of an interdependent utility function, however, your mother loves you insofar as you are an input to her total satisfaction. This way of modeling love does not capture anything that is selfless about love, or any higher order motivation. Instead, every action – whether it is caring for you when you are sick, or embracing you and illustrating patience when you have harmed another – is collapsed into a utility maximizing activity. "Utility is the measure of an ends-means logic, what I am calling Prudence Only"(ibid.: 111).

Maximum utility or "Prudence only" falls short. McCloskey offers a further example, the claim that "unethical behavior is neither consistent with value maximization nor employee self-interest." She asks, wouldn't that be nice, if it were true? (ibid.: 120-1) The truth though, is that you cannot run a family, church, community or capitalist economy – on prudence or profit maximization alone. Within the context of a family, this sort of thinking assumes that every decision has an answer which neatly helps achieve the family's goals (which everyone understands and has agreed to in advance), and therefore, simultaneously, the goals of each family member. There is never any room for arguments! In reality, most of our decisions – whether to stay late at work, to do the grocery shopping, or suggest a visit to in-laws – is not part of a maximization problem, but instead comes from a more sacred goal or sense of duty.

Applied to a capitalist economy, the claim that "unethical behavior is neither consistent with value maximization nor employee self-interest" is still incorrect. Our market economy may appear to work this way because we see that the store

owner could have charged you five dollars more for your merchandise (maybe intentionally ringing up the same item twice), but he does not. This must be because he realizes that you might notice and then never return to his store. But, he also does not cheat a customer that he knows is unlikely to ever return to his store. How can we explain this phenomenon? Profit-maximizing behavior would be to take the extra five dollars – but he does not. In fact, over and over again, experimentalists have shown that people do not fit strict profit maximization predictions. For example, results from the dictator game, in which one person is given a sum of money and can decide whether to share some of the money with a second player, show again and again that people are not purely profit-maximizing. In most cases, the player gives more than zero dollars to the second player.

In addition to experimental economics, McCloskey draws from her own intuition (and introspection), moral philosophy, and literature to argue that virtues do inform our decision-making. We cannot ignore virtues – love, hope, faith, courage, temperance and justice - in our study of markets and capitalism. The tragedy here is that 257 years ago, social scientists (early economists) knew this. She writes, "Adam Smith knew that a capitalist society such as eighteenth-century Edinburgh could not flourish without the virtues of trustworthiness or bourgeois pride, supported by talk" (1994a: 181). Moral sentiment must ground a market.

Max U. cannot explain the decisions we make within the context of our family, nor the action of the entrepreneur. He cannot explain why the Industrial Revolution was the jumping off point for what became tremendous growth, on a level unparalleled in our history. McCloskey argues that what made the Industrial Revolution possible was liberalism (the legal right for someone to become an entrepreneur, or "have a go") and, importantly, a shift in ethics. As she has written, in order for the take off to happen, "society need[ed] to accept bourgeois virtues, instead of crushing them with aristocratic pride or peasantry envy or clerical/bureaucratic anger" (2012). These changes in attitudes finally made it acceptable – even dignified - to be an entrepreneur. Suddenly, there is a groundswell of talent, ready to make the world better through the market.

In her argument against Max U. McCloskey does not offer an alternative, or how we might construct an economics that incorporates virtues. Does the presence of virtue change economic theory? Or the methods that economists employ?

4. Max U. is also devoid of culture and should not be

Max U., the lightening calculator, is also devoid of culture. Max U. is always calculating on his own, in no context (without a geographical location, a time, or identity – no family, religious or spiritual upbringing, or educational background). He assigns some marginal utility level to a good (an apple), considers the price, and has his answer of how many to consume. Math is objective, right?

In considering current economic theory, we ought to ask, is it possible to incorporate culture into our character of Max U.? One way to incorporate culture might be to say that individuals maximize their utility by consuming different cultural objects. One person maximizes utility by consuming cultural object A; another has utility that is derived from their belief system.

Utility(cultural object A, …)

Utility(beliefs, …)

However, this still leaves questions. What is the meaning of cultural object A? How did they decide on object A – where did it come from? Or, if utility includes belief systems, we might want to know how do these beliefs impact how a person lives their life? The job they pursue or the structure of their family unit?

Placing cultural objects or beliefs in a utility function suggests that these things are akin to our consumption of apples and bananas. If we ask why Max U. has apples and bananas in his utility function and not, say, strawberries and oranges, the economist will answer, "preferences are subjective." Preferences are a black box, and the economist is not interested to go further.

If Max U. has no context, his cousin, Robinson Crusoe, offers a bit of context: a desert island. Crusoe as an example is also instructive because Crusoe has a companion, Man Friday (in other words, there is a social element). In period one, Robinson Crusoe is by himself, on an island cut off from the rest of the world, and must produce coconuts or fish. He divides his time between cutting down coconuts and catching fish. His production bundle is equal to his consumption bundle. In period two, Man Friday appears. Now comparative advantage can be used to determine who produces coconuts and who produces fish, and trade allows both to consume beyond their own production possibilities.

The example is oversimplified to focus on the benefits of comparative advan-

tage. In doing so though, it ignores other factors that are hugely important for the exchange between Crusoe and Friday. Do the two meet and decide to be friends or try to kill the other? Can they even communicate? (Do they speak the same language?) Do past experiences and social constructs lead them to work together, or drive them apart? (E.g. racism) Do they perceive of their position on the desert island to be a test of endurance, a trial created by God, or miserable misfortune? What are their expectations about the future – do they expect to be rescued the next day, or to live the rest of their lives on the island?

Lavoie and his students call for an economics that embraces *verstehen*, as Lavoie explains, "…understanding the subjective meaning of things and events to individual human beings," (2011: 105). As Boettke and Prychitko (2011: 134) write, the Austrian School views economics as,

> "a science of human action, of intentionality, of richly contextual decision making rather than the maximizing behavior of isolated individuals; Austrian economics … attempt[s] to interpret and understand meaningful actions…"

An interpretive economics – one that is interested in meaning - has to consider culture.

Culture is, according to anthropologist Clifford Geertz, "a historically transmitted pattern of meanings" (1973: 89).

This definition of culture requires that we study context and understand the motivation of the actor. Storr uses Ryle's (2009) insight about an eye twitch versus a wink to illustrate how meaning is the focus of culture (2013: 11-12). The description of the bodily movement for an eye twitch and a wink is identical. The meaning of each, however, is vastly different. An eye twitch could be part of a neurological condition, or a reaction to a speck of dust. A wink is a communication to another person, alerting them to a secret or showing affection to another. In order to distinguish between an eye twitch and a wink and understand what is actually being communicated (or not), the context is important.

Culture is always a part of economics even if we do not say it explicitly. Even the (seemingly) straight forward analysis that relies on relative prices changes, or differences between revenue and costs, are all in some way, determined by culture. As Storr (2013: 32) notes, there is a question about "what meaning should be attached to price changes… [and] when a difference between revenues and

expenses in fact signifies a large enough profit to make pursuing an opportunity attractive…" Even Max U. must interpret the price of the apple. The precursors to trade between Crusoe and Friday – a common language, even the understanding that coconuts and fish are food sources – are implied. And, as Austrian School economists have illustrated, by effectively ignoring culture, we find there are important social phenomena that we cannot understand or explain.

We cannot understand how entrepreneurs locate opportunities (Lavoie 1991), we cannot make sense of the varied outcomes across former Soviet states since 1990 (Boettke 1996), and we cannot explain the economic development (or lack of) in Ghana (Chamlee-Wright 1997). Lavoie (ibid.) has shown that culture helps to explain how entrepreneurs identify opportunities. Kirzner's theory of entrepreneurship has greatly enhanced our understanding of how markets move towards equilibrium, however, his explanation of how entrepreneurs locate opportunities is lacking. Kirzner states that "a hunch" propels the entrepreneur into action. But where do these hunches come from? Lavoie fills this gap by pointing to the role of interpretation and culture. The entrepreneur, rather than being an outsider of sorts (or maverick), is more attuned to her context and reads the environment with a greater level of sensitivity to what others want.

5. Economics with culturally-embedded decision-makers

Austrian School economists have sought to bring culture to the fore of understanding human decision-making. If we adopt Geertz's notion of culture, as the historically transmitted pattern of meanings, how does this influence our theories and empirical examinations of individual decision-making? Part of the shift is making explicit things such as social norms (e.g. reciprocity) that are always assumed, or there without us being fully aware that they are there. The world, the environment in which decision-making takes place, is only what human beings interpret it to be. In order to make sense of human action, economists must understand the meanings that individuals place on their actions.

Meanings come from a variety of sources – language itself (including the connotations associated with particular words), historical events, personal experiences, stories (told by family members, or communicated through books), and religious teachings. For example, Hans-Georg Gadamer (1976) notes that every person has a different interpretation of a painting or a photograph. Although some may evoke "culture" to point out that the item being considered is an arti-

fact of some society (i.e. a cultural object), another way to conceptualize culture is to view culture as what leads to the diversity of interpretations (or meanings) of the same physical object. Anthropologist Nuit Bird-David (1990) provides a similar analysis of culture, pointing to culture as it appears through a metaphor for the Nayaka, a gatherer-hunter society in Southern India. The "forest as parent" is a particular interpretation of the combination of earth, trees, and animals that solicits very different actions towards the forest, and is an essential part of understanding economic life among the Nayaka. Religious teachings, as Max Weber describes in his *Protestant Ethic and the Spirit of Capitalism* (2011), provide meaning to work life, and, in the case of Protestantism, provided a consistent ethical basis for capitalism. As Storr notes, stories of economic success also impact how individuals view opportunity and the decisions that they make. The model of the American Dream, for example, arguably animated the lives of many, and shaped the emerging structure of life in the United States, from decisions to marry and when, to the decision to purchase a home and a car. McCloskey has sometimes referred to her study of economic action as "humanomics." These studies of meaning similarly put "the human" back into economics.

One example of culturally-embedded decision-making is Storr's book *Enterprising Slaves and Master Pirates: Understanding Economic Life in the Bahamas* (2004). Storr describes "the spirit of enterprise" in the Bahamas, drawing from the literature within the Austrian School of economics, as well as Gadamer's work on interpretation and Weber's socially-embedded actor. Storr analyzes the economic history of the Bahamas, including the practice of slavery on the island, as well as the island folklore and narratives of success. By offering two ideal types of the Bahamian entrepreneur- the enterprising slave and the master pirate- Storr shows that there is not a single perspective to understanding economic life in the Bahamas. These characters do, however, help us to understand the complex history of the island, and economic life today in the Bahamas.

Interestingly, in the same book, Storr suggests a further way in which to conceptualize culture, with the comparison between culture and a constitution. He notes that both culture and constitutions (1) define the rules of the game and (2) direct individuals away from certain activities and towards others. By "rules of the game," Storr is referring to our notions of who has what authority and the methods that can be used. Consider, for example, your neighbor asking for help moving lawn furniture, versus your boss asking for assistance at her home. Or, the eye twitch/wink from your sister (a wink regarding a prank), versus a stranger

(a likely eye twitch). In each case, actions have specific meanings that are understood and act as informal rules, and at the same time, direct what we chose to do and do not chose to do. John (2015) has elaborated on this idea, pointing out that both culture and constitutions (1) bind participants' decision-making, (2) serve to transmit meaning, and (3) facilitate consistent and predictable interaction among different individuals. And, "they make life intelligible and navigable, and allow for interdependence among people" (ibid.: 232).

In the aftermath of the fall of the Soviet Union, Austrian School economists looked to culture to make sense of the varied experiences across different countries with political and economic transition. At the beginning of their 2000 book, Lavoie and Chamlee-Wright describe culture as the meanings that underpin formal institutions in society. It had become increasingly apparent that cultural elements are needed to support rule of law, property rights, and individual liberty. New laws and market reforms could not take place if these changes were inconsistent with underlying attitudes, norms, and values. New laws require legitimacy from the particular social context. Boettke et al. (2008) use the terminology of "institutional stickiness," and argue that indigenously introduced endogenous institutions (IEN) are most likely to hold (or be accepted as legitimate and be successful) because they are consistent with the underlying culture. This conception of culture as the informal elements that underpin formal institutions in society, moves us from how individuals assign meaning to action to how meaning can evolve or resist change.

5.1 A note on data and methods

One reason that many economists ignore culture is that culture cannot be easily quantified. Within the literature there have been efforts to quantify culture, for example, by analyzing results of the World Values Survey, and including answers to key questions as variables in a regression analysis. This way of defining culture is misleading. Survey answers provide a poor proxy of culture. The method also misrepresents culture by making it appear as homogenous and is silent on the possibility of how culture may change over time. As Storr (2013: 4) has written, this method leads to the "scoring" of cultures and placement of cultures as either promoting progress (where progress is economic growth) or resisting progress. Culture is far more complicated. As he notes, "[e]ven in the so-called 'progress resistant' cultures, there are attitudes and beliefs that work to promote progress" and that "a spirit of enterprise can be found in the most unlikely places" (ibid.).

Rather than rely on quantitative data, Austrian School economists have used

qualitative data and have tended to adopt a case study approach. Qualitative data can take the form of historical accounts, studies of belief systems, and the stories or metaphors used. McCloskey's *Bourgeois Virtues* uses qualitative data through her references to popular culture, novels, and other works. Within the Austrian School, scholars have relied on written histories and used other qualitative methods, specifically in-depth interviews (see Chamlee-Wright's 1997 book on economic development in Ghana; also books and articles from the Gulf Coast Recovery Project, including Chamlee-Wright 2010). For example, Chamlee-Wright (1997) engages in in-depth interviews with market women in Accra, Kumasi, and Madina, Ghana to better understand the local economies, and in turn, economic development in Ghana. An outsider may observe the markets and point to lack of financing or suggest further division of labor and economies of scale (rather than many small shops with similar items). Through interviews and extended observation, Chamlee-Wright (1997) pieces together the institutions that make the market place work (e.g. savings clubs) and uncovers how the criminalization of market activity affects how the women conduct their businesses.

There are several advantages to in-depth interviews. First, the open-ended nature of the interviews allows for genuine discovery. An in-depth interview is different from a survey because the interviewer does not ask interviewees to select answers from a pre-populated list, but rather, ask the interviewee to construct their own answer(s). Some of the answers are surprising and the weight they give to their answers is also instructive. Second, by allowing the interviewee to elaborate on their experiences, it can be easier to get a sense of their narrative, or how they are interpreting their situation. Understanding how individuals made sense of changing circumstances, form expectations about the future, and engage in personal cost/benefit analysis is important for developing our own understanding and explanation of economic action.

Qualitative methods, and in particular in-depth interviews or ethnographies, lend themselves to a case study approach. The researcher intentionally digs deeper into one or two examples, rather than continuing to expand the sample size. These approaches, a reliance on qualitative data and case studies, is outside of the typical methods used by economists.

5.2 Empirically

Below, I share some of my research on how culture helps to explain the persistence of traditional leadership and the continuation of communal land in

South Africa.[3] The research comes from interviews conducted in one traditional community, the Gumbi community near Mkuze, KwaZulu Natal, in the spring of 2007 and 2009. I also used secondary sources, notably, a history of the community gathered by an attorney investigating the community's land use.

In 1996, South Africa adopted a new constitution, establishing a framework for the young democracy and bringing decades of apartheid rule to an end. Led by President Nelson Mandela of the African National Congress (ANC), the country sought to develop a path forward that would include economic opportunity for all citizens. It was clear that if the young democracy was to succeed, it had to address issues of land tenure and poverty in rural areas. To this end, the ANC created the Reconstruction and Development Programme (RDP), which outlined development goals for urban and rural areas and a land reform program. There was a plan for land redistribution (following a willing-buyer, willing-seller model), land restitution, and land tenure upgrade. Apartheid had left 87% of land in the hands of whites, and 13% of land to the majority black population. In addition to plans around land reform, the new government created municipal governments throughout the country, in both urban and rural areas.

Over twenty years later, however, many communities are still organized under traditional leadership and communal land tenure continues in many rural areas. The question that I explore, then, is how have these institutions persisted despite government efforts to overturn or weaken them?

Traditional leadership refers to structures in which a chief (selected by birthright) is the leader of the community and also custodian of the land. Chiefs govern with the support of headmen. Families within a community have land which is understood to be for their use only and have access to some amount of communal land for grazing and other purposes. These land arrangements are largely informal; much of the land is legally owned by the state and few have an actual title deed to land. Two pieces of legislation sought to reform these institutions, the Traditional Leadership and Governance Framework Act (TLGFA) and the Communal Land Rights Act (CLARA) (and Interim Protection of Informal Land Rights Act). The TLGFA created the structure of traditional councils, which have a combination of headmen appointed by a chief and others elected by community

3 Also see, Grube, Laura. 2015. "The role of culture in the persistence of traditional leadership: Evidence from KwaZulu Natal, South Africa." In Grube and Storr (Eds.) *Culture and Economic Action* Northampton: Edward Elgar, pgs. 375-397.

members. CLARA was established as a means to provide more secure land tenure to those in traditional communities. Due to a procedural error in the adoption of the law, it was repealed in 2010, and since then, tenure upgrades have been considered using the Interim Protection of Informal Land Rights Act.

In exploring the question of why communal land and traditional leadership persist in South Africa, Public Choice Economics provides some explanations for why the changes articulated in 1996 have not come to fruition. Vested interests and lack of political competition can explain part of the story. KwaZulu Natal, a province of South Africa with a particularly strong history of traditional leadership, has a set of political actors, including chiefs, headmen, and members of the Inkatha Freedom Party, who personally benefit from maintaining traditional leadership. These actors view land tenure upgrade as a threat to the institution of traditional leadership, as a key function of chiefs and headmen is to act as custodians of the land (a role that may fall away with private individual ownership). Further, municipal governments in rural areas are not a substitute for traditional leadership, but were created to act as a complement to the existing systems.

The Public Choice explanation, however, only goes so far. Interviews conducted in KwaZulu Natal and second-hand accounts of the history of these communities suggest that at least some community members support traditional leadership (without reform) and existing land arrangements. In order to understand why these transitions have not taken place, I study a particular traditional community, the Gumbi community, in the province of KwaZulu Natal. The community had received land through a restitution case. From the case study, I come to appreciate the importance of (1) Zulu history and tribal identity within the community and (2) beliefs around property rights in understanding traditional leadership and communal property.

There is a way in which the Max U. logic would consider the question on the persistence of traditional leadership and communal land by saying that individuals in these communities see the benefits of traditional leadership and communal land outweighing the costs. But this is an unsatisfying answer. A more satisfying answer would consider how these institutions came about to begin with? And, it might explore why these community members believe what they believe. Importantly, explanations that rely solely on "benefits outweigh costs" have no way of explaining institutional change.

Zulu history and tribal identity does bring meaning to the lives of elders in the community. Within the Gumbi community, elders share stories, which

have been passed down through oral histories, about members of the Gumbi clan during the time of King Shaka (a powerful Zulu King, 1787-1828). Formal records are almost nonexistent, with the exception of the Final Report of the Zululand Lands Delimitation Commission, carried out by the British government following the annexation of Zululand to Natal in 1897, which estimates 448 heads of household in the Gumbi clan. Although the Gumbi are recognized, they were not allocated any land within reserve territory and instead, occupied crown land or land reserved for white farmers. This history is described by community member and headman, Sakhile, who notes how the Gumbi worked for the white farmers: "[We] worked a long time, suffered a lot, working on farms for six months and get[ing almost] nothing." The benefit for six months work, explains Sakhile, was the ability to inhabit the land and a few bags of meali meal, but no money (interview April 2007). White farmers dictated how the Gumbi occupied the land, including a limit of five cattle per household. As another Gumbi community member described, "the farmers sa[id], 'reduce cows, [they are] overgrazing the land'" (ibid.). The limit of five per household significantly affected a family's wealth as well as their cultural identity.

Attitudes toward the chief come through as interviewees also note with disgrace that the chief was forced to perform manual labor. More recently, community members also demonstrated respect for the chief (Inkosi Zeblon) when leaders sought his guidance in regards to the land restitution claim. Nathi explains,

> "We wanted him [Inkosi Zeblon] to be involved, he is a leader. People go to him and ask questions, and we wanted him to know [about the operations of the Trust] so he can answer questions. [Also], Inkosi brings respect [to the project]. If there is a new idea, people will accept more easily if Inkosi is involved" (interview April 2007).

The community was awarded 18,500 hectares in land and R30 million in equitable redress. The Gumbi officially received the land on June 24, 2006. The land is held by the Gumbi Trust.

In KwaZulu Natal, communal land and traditional leadership are in some way inseparable. As Mashele (2004: 352) writes, a chief is only a chief if he has people and land to identify as part of the clan. Further, if land were sold (as some point out is possible with a formal title deed), this would result in the chief "not having land, which will be the end of ubukhosi [the chief]" (Alcock and Hornby 2004: 17).

In addition, individuals resist receiving the right to sell land because they believe that they must continue residing on the land in order to communicate with ancestors buried there. Monteiro-Ferreira (2005: 357) explains, "rather than conceiving of an all-governing God, the Zulu peoples, following ancestral African religious systems, believe in the existence of ever-present ancestral spirits who watch over daily activities, promote social harmony, and create a sense of accountability among its members." And, as Alcock and Hornby (2004: 14) note, all rightful heirs of a homestead have the same surname as the former homestead-head and have the ability to communicate with ancestors. "[A]ncestors are only able to recognize communication that takes place from a specific, ritualized place on the homestead plot" (ibid.). This ability to access the guidance of ancestors is important for the future success of the clan.

Although family members may live and work in the city (e.g. Durban, in KwaZulu Natal, or even Johannesburg, in Gauteng Province), they return to the rural areas throughout the year for holidays, weddings, and funerals. City populations throughout South Africa are ethnically diverse and sometimes described as integrated spaces. Others point out that those who live and work in the city do not actually view themselves as fully a part of the city. Koelble and LiPuma (2011) point out that government workers and university students alike "circulate narratives of 'returning home [to the rural areas]'"(ibid.: 15). The rural homesteads are the sites of important ceremonies, provide a safe place for family members to stay if they find themselves down on their luck, and are destinations for a quiet retirement after working in the city.

I argue that the persistence of traditional leadership in KwaZulu Natal can be explained by (1) the vested interests of and the lack of competition faced by traditional leaders, (2) the saliency of the Zulu's history and tribal identity, and (3) their beliefs around property rights.

The future of traditional leadership and communal land, however, depends on what younger generations chose to do – whether they decide to stay in urban areas, what their attitudes are about traditional leadership, and what they envision as the future for their communities. There is some evidence that younger people see less of a role for traditional leadership (Oomen 2005: 187; Waetjen and Mare 2009). This may be because they few it as a thing of the past, or 'old-fashioned.' Further, in South Africa, young people express a desire to live in urban areas because they can more easily find jobs and have access to additional amenities; however, traditional leadership is not practiced in these areas. Therefore, young people

may have less experience with it. Alternatively, if economic conditions in South Africa continue to worsen (and are attributed to the current government, the African National Congress), young people may seek to explore other models of living.

6. Conclusion

Max U. does not provide a way to understand and explain human decision-making because he operates within a model that omits both ethics and culture. McCloskey and Austrian School economists have shown how this omission prevents economists from explaining economic and social change, including the Industrial Revolution and economic development among former Soviet states, the Caribbean, and southern Africa. In my chapter, I have illustrated how economists might incorporate culture into our theories of human decision-making. By examining historical accounts and interviewing individuals in the Gumbi community, I provide an explanation for the persistence of traditional leadership in KwaZulu Natal, South Africa. If we take culture seriously, we do not have to abandon economics, however, it might require expanding what we study to include other types of data (e.g. qualitative data) and other methods (e.g. interviews, ethnography).

In my chapter I have shown some of the similarities between McCloskey's work and the research program of Lavoie (and his students). The intellectual history of the two research programs further highlights why the arguments to include virtue and to include culture matter for the study of economics.

First, McCloskey's and Lavoie's work are responses to the move in economics towards positivism/modernism, or the idea that knowledge is to be modeled on physics (McCloskey 1985: 5). In 1985 McCloskey published *The Rhetoric of Economics* (as an article in the *Journal of Economic Literature* in 1983 and then as the book), in which she elaborates on the "poverty of economic modernism." Boettke and Storr (2017: 192) have summarized her argument on modernism as a method into three parts: (1) modernism demands falsification, which is not possible in a social science, (2) similarly, it uses prediction (which is also not really possible) as the test of a good theory, and (3) "positivism is not philosophically defendable, nor is it particularly fruitful" (Boettke and Storr 2017: 192).[4] McCloskey reminds us of these arguments in order to emphasize the limits of our

4 On the issue of falsification, McCloskey references philosopher Pierre Duhem (1906). Austrian School economists have elaborated on the use of prediction in economics, see for example, Hayek (1967).

methods and our knowledge.

Economic modernism, McCloskey states, has been embraced, in part, to "demarcate Us from Them, demarcating science from nonscience" (ibid.: 26). *Real science uses math*. (This attitude is also why McCloskey refers to Max U. as "macho.") Instead, McCloskey explains that every scholar is reliant on rhetoric, and we should not pretend otherwise. Boettke and Storr (2017: 193), reiterating McCloskey's argument, note that she challenges us to move away from "fetishizing particular mathematical representations and statistical techniques" and instead "accept that we resort to mathematical formulations, statistical tests, or scholarly traditions as rhetorical devices to make our case" (ibid.). We do not have access to the Truth; we can only use rhetoric and engage in persuasion.

Also in 1985, Lavoie wrote an essay entitled, "The Interpretive Turn,"(reprinted in 2011) in which he criticizes positivism (he uses the term "objectivism"). He references McCloskey (no year is given, but he clearly is thinking of The Rhetoric of Economics, either 1983 or perhaps 1985)

> "… it is only the explanations they themselves [economists] find interpretively compelling that persuade them, [and] it is only the econometrics or the mathematical proofs that they consider the scientific part of their work. Theories, we solemnly teach our students, must be accepted or rejected only on the basis of their predictive accuracy or mathematical rigor" (2011: 93).

Unsurprisingly, both McCloskey and Lavoie met firm resistance from fellow economists, deeply uncomfortable with the assertion that economics is "merely" rhetoric, or that economics is the study of interpretations only.

In addition to their criticisms of positivism, McCloskey and Lavoie both advocate looking to other types of data and other sources of data in our study of economics. In "The Interpretive Turn" Lavoie says that, as social scientists, economists ought to be concerned with the meaning behind human action, acknowledging that human beings must interpret their environment in order to act (culture then becomes important). Economics is the study of interpretation. To access those interpretations, we may want to rely on data that is qualitative. We may want to consider, for example, history, language, and narrative (to name only a few) in our study of human action. Similarly, McCloskey has said that, "The economy does a great deal of talking… The faculty of speech deserves some ana-

lytic attention, even from economists" (1994b: 30). McCloskey's trilogy is filled with references to other types of data - accessing the conversation in the market as it were - including novels, newspaper stories, and religious texts.[5] McCloskey urges us to pay attention to these conversations viewing them not as peripheral to our subject matter, but as playing a role in economic and social change. McCloskey's and Lavoie's reliance on other types of data and sources of data also illustrates their own range of knowledge.

McCloskey and Lavoie resist a narrowing of economics and even consider other disciplines to advance their understanding of economics (engaging the contributions of other disciplines, rather than trying to overtake them through economic imperialism). McCloskey has been part of several departments during her career (many at the same time), including English, communications, history, and economics (her *Rhetoric of Economics* is undoubtedly influenced by her study of English and communications). Lavoie seeks to bring together hermeneutics, the science of interpretation, from continental philosophy and praxeology, the science of human action, from Austrian School economics. Importantly, Lavoie was the co-founder of the interdisciplinary Program on Social and Organizational Learning at George Mason University and read widely in philosophy, anthropology, and sociology (in addition to economics).

The ties between McCloskey and the Austrian School run deep. As Boettke and Storr (2017: 202) note, McCloskey has even stated that she is transitioning from a Chicago economist to an Austrian economist. McCloskey's influence on Austrian School economists is visible in (1) the broad acceptance of various sources of data including narrative history and ethnography, (2) the social and economic adjustments that take place in the market process and the role of the entrepreneur, and (3) the awareness of the legitimating ideology of the market system that unfolded during the bourgeois era and continues to unfold today (ibid.: 191). The exchange between McCloskey and the Austrian School has been fruitful and will undoubtedly continue to shape studies in political economy.

5 A further wrinkle is worth noting in how interpretation (or rhetoric) can be understood as both the interpretation (or rhetoric) of the economist, on one level, and the task of the economist as being to study interpretations (or rhetoric). We have then, interpretations of interpretations.

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Literary Paint and McCloskey: Reading *The Rise of Silas Lapham* as an Economic Formation

Chuck Lewis[1]

Near the beginning of his *Wealth of Nations,* the classical economist Adam Smith makes the claim that our human propensity for trade is related to our faculty for language--we like to swap stuff for much the same reason as we speak and listen to one another's stories. Smith suggests that economic activity is "the necessary . . . consequence of a certain propensity in human nature . . . to truck, barter, and exchange one thing for another," which he, in turn, speculates could be "the necessary consequence of the faculties of reason and speech" (25). The links between economics and literary study accordingly have a long tradition, which includes thinking of literary fiction as an economic formation, for whether we cast the novel as a higher form of gossip or an empathy-othering antidote to the solipsistic excesses of Selfie-World, or argue about whether it is best understood as a quintessential artistic form of modernity or an exercise in cultural appropriation, prose fiction is a textual agora of transactions that point us to Deirdre McCloskey's work in many ways. Put differently, at least some of my work is her fault. My comments here are intended to share how she came to shape my work, to say a few things about the novel as an economic formation more generally, and to ground or illustrate those claims by way of the example of William Dean Howells's *The Rise of Silas Lapham* (1885).

When I was an undergraduate at the University of Minnesota, I took many courses in both the Department of Economics, which sits behind the high bluffs on the west bank of the Mississippi, and the Department of English, which is located on the East side of campus across the river. I often found myself walking back and forth across the high expanse of the Washington Avenue Bridge, which

1 Chuck Lewis is Professor of English and Director of the Writing Program, Beloit College.

conjoins these two very different academic locations, and on too many of those wind-lashed sub-zero winter trudges, I had reason to wish that literary studies and political economy might stand at least a few minutes and degrees closer together. I ended up dropping economics and focusing on literature--and stopped crossing the bridge quite so often. Or so I thought.

For later, however, while in graduate school working on my doctorate in English, I again became interested in connections between these two disciplines, and eventually focused on what I referred to as a "coincidence of wants" between neoclassical economics and the novel. McCloskey was a central figure in what was then (this was the early 90s) referred to as the New Economic Criticism, and I remember attending a Cleveland conference over which she spiritually presided that brought together a group of academics from a range of fields, including literary critics, economists, historians, and rhetoricians.

Reading McCloskey's *The Rhetoric of Economics* was for me a sort of early lifeline and an inspiration in its exploration of the role of metaphor and narrative in economics--a sort of mirror project to my own examination of how classical and neoclassical economic concepts could be useful in understanding formal, thematic, and historical elements of the novel, especially given the rise of this modern literary genre in tandem with the emergence of market capitalism.[2] It makes a sort of common sense worth remembering that the eighteenth century gave us both Daniel Defoe and Adam Smith--or that we later encounter the radical subjectivity of the neoclassical decision-maker in the psychological realism of the late nineteenth-century novel, which I will emblematically conjoin by making the point that George Eliot published *Middlemarch* in 1871, the same year that saw the arrival of what we might call the microeconomic turn of the marginalist revolution, as reflected in the publication of seminal works that same year by Jevons and Menger (Walras's work came three years later).

If McCloskey's earlier work focused on the literary elements of the economic imagination, her later works such as *The Bourgeois Virtues* have occasionally refer-

2 This connection between the rise of the modern novel and economic capitalism is a familiar and conventional one, as reflected in seminal works by critics such Ian Watt and Michael McKeon. It's important to recognize, however, that critics such as Doody remind us that written prose fiction has a longer, broader, and more diverse history. However, just as market exchange has long preceded and vastly exceeded the confines of a 300-year history of Western capitalism, one can point to key formal, historical, and cultural distinctions between the modern western novel and its more diverse antecedents and cousins. In a highly negative review of Doody's history, for example, Lennard Davis argues that she attempted to tell the story of the golden retriever and ended up writing a history of the dog.

enced the novel as cause and effect or at least register and reflector of some of the concerns that she both describes and advocates. This linkage between literature and economics has, of course, been long recognized and examined by Marxist literary scholars, such as Georg Lukacs' claim early in the twentieth century that the realist novel had taken a wrong turn away from history and politics and the social landscape into the increasingly formal interiority and psychological subjectivity that arrived at the dead-end privacies of modernism, much as Fred Jameson has more recently made similar observations about the mirrored funhouse of postmodernist fiction under late-capitalism. However, unlike Marxist economic readings of the novel, an alternative economic literary criticism simply remembers that there is another economic toolbox in the house. Literary critics who speak of false-consciousness and reification might also make useful reference to classical and neoclassical concepts such as indifference curves and comparative advantage.

The novel both wears its bourgeois brands and holds many patents in the anti-bourgeois tradition. Unquestionably, the novel is often middle-class in relation to its subject matter, the material history of the book as a commodity in the economic marketplace (think paperbacks or remember how Amazon started), its status as a cultural artifact conspicuously displayed on the parlor-room shelf, and its function as both a manual and social media app for its anxious, leisured, and self-improving readers. I would just note here that McCloskey's celebration of bourgeois virtues paradoxically (and I think she would say, happily) resonates with some of these Marxist critiques, if to different conclusions, which only underscores the broader point. Put differently, the form and function of the modern novel could be described as a performance of just the sort of engagement with and ambivalence about those bourgeois values that McCloskey has addressed in her work on a broader scale. However we cast it, the novel is deeply implicated in this story, and it's not just about the money.

So I have long been interested in these sorts of tangled connections between the economic and literary imagination. To take a recent example, this past summer I was working on an article on painting, photography, and landscape in William Dean Howells's 1885 novel, *The Rise of Silas Lapham*, which stands as a perfect example of what we call the American realist period and is often described as America's first business novel. Howells was influential on the literary landscape for more than four decades after the Civil War as a novelist, magazine editor, and literary critic. He is most well known as the leading advocate for American literary realism, and supported and published writers such as Mark Twain, Henry James,

and Stephen Crane. He championed a broadly national and diverse literature that he variously described as democratic, truthful, vernacular, authentic, practical, and uniquely suited to the American project. While economics wasn't the focus of my work on this particular novel, the dismal science was nevertheless impossible to avoid--even when the novel was, as it were, looking elsewhere.

The Rise of Silas Lapham is the story of a Civil War veteran from Vermont who becomes rich in his business as a paint manufacturer and seeks social success for himself and his family in Boston. Lapham gets into serious business trouble while stumbling socially, makes some bad choices and some good ones that involve both economics and ethics, loses mostly everything except his family and his moral compass, and ultimately retreats to his frugal Vermont roots and a much more modest financial foothold. The novel is most commonly read as both a celebratory profile of the idealistic and hard-working businessman *and* a cautionary tale about the evolving capitalist marketplace in the second half of nineteenth-century America. Howells was (at least at this time) an entirely bourgeois writer whose interest in what he called the "smiling aspects" of American life caused him to both deeply admire and candidly depict the limits of his protagonist, and so we might say that the novel is built out of the very substance of its own reticence, which is in itself, I would argue, a sort of bourgeois move. This is emblematic of a broader pattern of the genre, in which the familiar anxieties of the middle-class are said to be manifest in the conventional novelistic furnishings of ambivalence and ambiguity. Similarly, arguments about whether the politics of novels are progressive or conservative can sometimes fail to recognize how much of that spectrum nevertheless falls within a broader framework of the bourgeois values and practices of their authors, characters, and readers.[3]

Howells's novel gives attention to macroeconomic issues such as the business cycles of the post-war period and the challenges and opportunities of increased international trade, as well as the microeconomic decision-making of the individual consumer and producer. The novel could also be described as an examination of the source and signification of economic value, along with the broader question of the relationship between economic, ethical, and aesthetic values, as reflected in the observation by one of the characters that "[it's] very odd . . . that some values

3 These sorts of arguments about the novel are similarly played out in discussions of particular literary movements (such as Romanticism) or sub-genres (such as science fiction) of the novel. See Bell and Kaplan, for example, for a range of perspectives on the political or ideological payload of American literary realism.

should have this peculiarity of shrinking. You never hear of values in a picture shrinking; but rents, stocks, real estate--all those values shrink abominably" (95-96). These problems are depicted, for example, in Lapham's relationship with his business partner, who knows nothing about the paint business but who supplied Lapham with needed capital; it's because Lapham later feels guilty about squeezing the partner out of the business that he later agrees to help him on another venture in a deal that ultimately ruins Lapham because he won't take advantage of a third party as the partner wishes. Readers get to argue, as do the characters, about Lapham's quest for Pareto optimizing decision-making in all sorts of ethical and economic registers and contexts.

This problem is, as it were, double-folded into its depiction of Bromfield Corey, the Boston Brahmin whose company Lapham can't quite admit to himself that he wants to keep. This rather lazy and affable aesthete is cast by Howells in both negative and positive lights in ways that flip and then square his ambiguous handling of Lapham. As a member of the haute-bourgeois whose family and fortune is now in decline, Corey recognizes the rise of this new-money middle with neither disdain nor enthusiasm, but something more like resigned irony:

> "Yes . . . . the suddenly rich are on a level with any of us nowadays. Money buys position at once. I don't say that it isn't all right. The world generally knows what it's about, and knows how to drive a bargain. I dare say that it makes the new rich pay too much. But there's no doubt but money is to the fore now. It is the romance, the poetry of our age. It's the thing that chiefly strikes the imagination . . . . It's all very well. I don't complain of it." (64)

Moreover, Lapham isn't just a capitalist in some generic or familiar sense of a profit-maximizing economic agent. Instead, he offers us a portrait of the entrepreneur who is not only a creative risk-taker, but also a fundamentally generous gift-giver who believes in his paint with all his heart; the reader has the sense that economic profit is more like a by-product of his desire to make something useful and beautiful and to share it with others--something much more like Marcel Mauss's notion of gift exchange or more recently Lewis Hyde's notion of the artist as gift giver. And the novel seems to affirm this version of paint, even as our author underscores Lapham's flaws, smiles condescendingly at his enthusiasms, and traces a number of market externalities whose costs are nevertheless registered in the narrative economy, such as the cheapening of speech as it gives way to a commodified

mindset, the vulgarities of conspicuous consumption embodied in an overbuilt Gilded Age home, or in Lapham's literal defacement of the New England landscape with painted advertisements. If the neoclassical economic model posits something like full information and free exchange, the novel as a genre also conveys the viscosities and complexities that come immediately and inevitably after the first sentence of this opening "as if" premise; perhaps novelists have more colors of chalk in their pockets than do economists when it comes to telling their stories.

It's important to understand, however, that a novel is not just a didactic drone delivery device for conducting some fixed economic or ethical model. Much as we say that a poem is what gets lost in translation or that literature is exactly what we give up when we reach for paraphrase or that a character is always more than a polemical meat-puppet, a novel is itself a specific kind of narrative technology whose working parts and formal operations can variously embody, enact, and reflect this economic content. My point here is that it is not just Silas's identity as a businessman that makes him an economic figure; instead, it is a function of the genre's notion of a character as an *individual*, of the individual as the *driver* of the narrative, of a narrative topography that places the interior *subjectivity* of that protagonist in a broad objective reality of the social field, and of the patterns whereby both that individual and the social terrain are imagined as engaged in the realization of a developmental trajectory that conflates novelistic movement with social change--if only by way of the one realized in the very act of reading. One can argue therefore that casting these aspects as economic formations in the broadest sense enables us to see how critical models as disparate as psychoanalysis, Marxism, or linguistic semiotics nevertheless end up in a household that is at least in part substantively furnished in what McCloskey calls bourgeois virtues and values, even as our critical stances in relation to them can vary considerably.

Howells's novel poses a linkage between novels and middle-class values in at least two ways. First, the characters engage in several discussions about "good" books and "bad" ones in terms of their features and their influence on readers. Most of this discussion involves the question of sentimental romance and how it distorts our ideas about emotions and ethics. Second, we follow a somewhat different line of inquiry and activity about the "right" books that speaks more to how selecting certain works can be a way of displaying your class, as when the Laphams seek Tom Corey's advice about building their library for the new Lapham home.

This connection to their new Back Bay house, in turn, especially in relation to Lapham's dealings with the architect, further develops this theme of bourgeois aes-

thetics and economics. For the architect sees himself as superior to his rather crass client, and their dance is largely cast as his attempts to smuggle in good taste while tolerating and compromising with Lapham's poor taste. Yet as readers we stand in a position where we are invited to smile also at the architect's sense of beauty, given as it is to the aspirations of the Gilded Age. Even so, we again need to be careful about breaking into any smug smile that is itself funded by our own sense of taste.

So this novel offers a number of suggestive economic tropes beyond its literal economic payload. For example, while the novel is obviously concerned with paint, given that its manufacture is Lapham's business, paint also offers Howells a set of metaphors for his own concerns with literary realism. Paint enables Howells to raise questions about the representation of value more generally, circulating in the novel in a way in which paint is depicted as a natural resource and a manufactured commodity that also circulates as a medium of exchange or a sort of universal signifier of value. This suggests how paint even offers Howells a figurative mechanism for meditating on the monetary debates of the period about the relationship between commodities, gold, and paper.[4] These monetary tropes are further reflected in Lapham's trajectory away from the reality of industrial manufacturing toward the paper fictions of anxious speculation in the financial markets that bring on his ruin. In this novel, paint is money in more than a literal sense--or, to revise this, it is figuratively money in a rich theoretical sense that should be of interest to economists, much as that economic analysis can help literary critics understand how the paint more broadly poses questions about the representation of reality in this novel. In fact, as McCloskey and others have pointed out, the theoretical and historical connections between metaphor and money are extensive, evocative, and essential for us to understand--on both sides, as it were, of the Mississippi River--or even along the serpentine sidewalk that runs from the World Affairs Center to Campbell Hall at Beloit College.

Much as critics have looked to Silas's character and settings such as his home to identify the economic and social rhetoric in the novel, so too have they variously debated the broader plot structure of Silas's economic rise and fall and his return to rural Vermont.[5] The title of the novel, speaking only of his rise, poses the question of how to read his fall. As noted earlier, Silas finds himself caught in

4 See, for example, Walter Benn Michaels for an extensive analysis of the links between literary fiction and money in this period.

5 See Pease's anthology for a good overview of the range of critical approaches to this aspect of the plot.

a difficult decision about whether to take advantage of the ignorance of some potential business partners, and his choice not to do so causes him to lose his chance for economic recovery. However, the novel seems compelled to reassure us that this ethical decision, while made at great cost, is not entirely an economic disaster, because along with the return to his modest Vermont farmhouse a more modest enterprise emerges phoenix-like in the form of new directions for both domestic and international market share.

One can go even further regarding this Vermont plot line to interpret it as something quite the opposite of a retreat to some rural past. My position is that Howells's (and Lapham's) depiction of the family mine (which provides the ore for paint) as a site of natural resource extraction and manufacturing configures it paradoxically as a sort of disguised doppelganger to a broader but rather covert western theme in this ostensibly New England novel, which references a variety of western characters, activities, and regions in a broad tapestry of a nation's forward-looking geographical and economic expansion, which Howells thought a central component of American literary realism.[6]

The point here is that the Vermont return is not simply a harbinger of Howells's criticism of the direction of industrial capitalism in the post-war era, even as we recognize that later in life he clearly did become more pessimistic about the direction of the country. Nor should we read it as a sort of nostalgia for an increasingly distant rural past. And even if we were, what is the relationship between escapist literature and social critique anyway? Here again we see how the novel isn't so much a pro- or anti-bourgeois narrative as it is a performance of the sorts of arguments that the bourgeois middle-class seems to love to have with itself.

In fact, I can think of no single novel whose handling of character and capitalism offers a better case study for engaging with McCloskey's ambitious project of examining and advocating for capitalism's capacity to deliver the various benefits of a bourgeois system of values. I say this not only because of the novel's historical location and economic landscape, but also because the novel's formal complexities and thematic concerns resonate with or at least anticipate Howells's own evolving thinking about literary realism, political economy, and the world. In this sense, much as the novel offers a rich canvas for unpacking these economic ideas, those concerns in turn offer an occasion for understanding more deeply

6 See Martin Bucco and Nicolas Witschi for discussions of this "western theme" in Howells specifically and American literary realism more generally.

how fiction works and therefore how and why we should read it.

The novel, in other words, doesn't flat-footedly conform to or challenge McCloskey's claims, so much as it embodies and wrestles with the ideas with which she is engaged. That element of the literary imagination is in itself, she and I would argue, a bourgeois value *and* virtue. It's not altogether obvious what the book is arguing or how it or any novel goes about making its arguments, which is another link to McCloskey's longstanding project: showing us how metaphors, arguments, and narratives inform each other in complicated ways that we don't always recognize in our specialized complacencies and positivist pronouncements, especially in this era of Big Dada algorithms and the hegemony of numbers-driven epistemologies. In the era of the Quantified Self, for example, we might remember that the novel was telling us the news about ourselves in ways a Fitbit--that quintessential bourgeois-bracelet--never can.

A final example: In the novel there is a hilarious but heartbreaking scene in which a very nervous Lapham seeks to impress some very impressive dinner party companions who are old-money, high-society, and well-educated. He worries about how to dress, how to manage the silverware, where to put his elbows, and how to engage in the conversation that is rather out of his league. He even buys a book to pick up a few tips. (I might note, in passing, that this novel arguably has served its own readers in a similar capacity.) Anyway, at the dinner he manages slowly and then more quickly to drink too much wine because he's not exactly sure how to say no to the help that keeps refilling his glass. He goes on to make either a bit or a block of a fool of himself, but his embarrassment or even mortification the next morning is limited by his inability to quite make out how he behaved or what others thought of his performance, and the reader doesn't know much better because the perspective of the dinner scene is a tour de force of a third-person narrative point of view porously honoring the limits of the consciousness of his protagonist. So we, too, are as readers in a comfortably uncomfortable in-between space that I would argue is also a fundamentally middle-class predicament.

In other words, the scene is a staged performance of bourgeois desire and anxiety, and the reader is also invited to sit at the table with these social seating assignments and drink the Kool-Aid. This is the sort of transaction in which the novel engages, not unlike how McCloskey's work, with its intellectual range and resourcefulness, its ambitious ethical concerns, and its verbal playfulness, is something like the writing on a dollar bill: the words make it so.

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Marking Bodies in Academic Spaces

Catherine M. Orr[1]

Introduction

I have some suspicions about why I'm here, and you probably do too. In our initial conversation, Warren Palmer and I discussed both the affordances and the problematic assumptions of putting my expertise into the mix on this panel. My saying "yes" to this occasion, we both agreed, contained opportunities and unfortunate clichés. For those of you who may not know my expertise, please allow me to introduce myself: I am disciplined in a field that trades in terms like "identity formations," "structures of exclusion," and "intersectional analysis." These are terms that explain "fit"—as in whose bodies fit (or don't), where, under what circumstances, and with what effects. My people think hard, not just about the idea of inclusion of particular bodies in various spaces, but about the very *terms of inclusion*. By terms of inclusion, I mean the idea that social structures and institutions are not neutral, but, instead, are precisely that which need to be made visible, explored, questioned, challenged, and (often) changed. This means that the emphasis here is not simply declaring inclusion itself to be the unquestioned goal. Instead, it is about asking how exclusions occur (purposefully as well as inadvertently despite the best of intentions) and exploring how the very idea of inclusion might be something to be challenged and even resisted.[2]

This field of mine grew out of some 20th century social movements whose members demanded the right to speak about their own bodies, thereby foregoing the experts and professionals, who, too often, regarded these bodies as pathologi-

1 Catherine M. Orr is Professor and Chair, Department of Critical Identity Studies, Beloit College.

2 See Ann Braithwaite and Catherine Orr. *Everyday Women's and Gender Studies*. NY: Routledge, 2017 for an extended argument about the notion of fit.

cal or sinful or somehow lacking.[3] My expertise, therefore, is typically called upon in moments when bodies are marked in specific sorts of ways that, according to curiosity or custom, seem to require commentary, usually because these bodies seem somehow to be "out of place." Their terms of inclusion, it would seem, must be debated. On this occasion, however, I don't want to mark—or to remark upon—specific bodies as much as I want to contemplate, with the help of Deirdre McCloskey's scholarship, a more general observation about both the impulse to mark bodies in academic spaces and the consequences that follow. The question that remains for me is whether that desire to resist marking bodies is something that can actually be achieved.

My first claim is that this disciplinary impulse to mark bodies has a long history. In fact, many of our disciplines got us where we are today by categorizing, observing, and commenting upon other people's bodies. In other words, the bodies of others provide the raw material for disciplinary knowledge production, "object lessons" upon which expertise is cultivated and circulated. Anthropology and medical science would seem to be the low-hanging fruit for this claim. But they are hardly unique. Indigenous and postcolonial scholars tell us so: Beginning with Edward Said's notion of "the Orient"[43] as both a construction of the West as well as a "discourse about the Other which is supported by 'institutions, vocabulary, scholarship, imagery, doctrines, even colonial bureaucracies and colonial styles,'" (2) indigenous scholar, Linda Tuhiwai Smith, in her book *Decolonizing Methodology: Research and Indigenous Peoples*, goes on to argue that

> [a]cademic knowledges...organized around the idea of disciplines and fields....are deeply implicated in each other and share genealogical foundations in various classical and Enlightenment philosophies. Most of the 'traditional' disciplines are grounded in cultural worldviews which are either antagonistic to other belief systems or have no methodology for dealing with other knowledge systems. Underpinning all of what is taught at universities is the belief in the concept of science as the all-embracing method for gaining an understanding of the world (65).

3 I am speaking about how feminist, gay and lesbian, transgender, disability liberation movements came out of the Civil Rights and Black Power movements of the 1950s through the 1970s. As these movements moved into the academy, they manifested themselves as inter/disciplines as Black/Africana Studies, Chicano Studies, Women's Studies, GLBT and then Queer Studies, Whiteness Studies, Disability Studies. At Beloit, we roll all this up into the umbrella term of "Critical Identity Studies" which doubles down on the concept of intersectionality and builds on the intellectual foundations of women of color feminisms.

4 Edward Said. *Orientalism*. NY: Pantheon, 1978.

Note that Smith's analysis doesn't just apply to the disciplines that have some direct relationship to bodies (anthropologies, biologists, medical scientists) but the modern academy itself. She is remarking upon the epistemological foundations of the "will to knowledge" (as Michel Foucault via Frieidrich Nietzsche might put it), the need to name, categorize, and manage our objects of analysis as a form of reproduction of disciplines (and disciplinarians) themselves as a colonial discourse.[5]

Because my field emerged out of deep thinking about the relationships between bodies and identities—the ways in which bodies are marked in spaces as belonging or as out of place—the documentation of the discrimination and violence done to bodies-as-objects-of-analysis was the initial *raison d'être* of the early discipline. For example, early iterations of Women's Studies or Black Studies often included courses such as 19th century women's literature or African American History from Civil War to the Present. These kinds of courses indicate both an ancillary and compensatory move; in that they are not simply "literature" or "history" in any universal sense. By including the modifier "women's" or "black" the universal—"history" or "literature" that need not account for the difference that gender and race might make to claims about the idea of what can be regarded as universal—is reinscribed.

But of course like any other discipline, once conferences, journals, programs, departments, and tenure lines were established, the work of naming, categorizing, and managing our objects of analysis—those othered bodies along with the web of social structures, institutions, and discourses that produced them—set in. Thus, my discipline also went in search of bodies as object lessons: gendered bodies, raced bodies, sexualized bodies, disabled bodies, nationalized bodies, fat bodies, pregnant bodies, and of course, transgender bodies.

Trans bodies were especially useful as illustrations of various arguments about gender fluidity. What better example could we ask for to demonstrate that gender binaries are a fiction than the testimony of those who claim to have crossed over that supposedly natural border? But even for scholars who inhabit these trans bodies, my discipline demands that they make the intimacies and vulnerabilities of their bodies (the data of their lived experience) the object of knowledge, that which can be evaluated and critiqued by one's peers. This business of disciplining

5 Michel Foucault elaborates on this idea most directly in *The History of Sexuality, Volume 1* (NY: Vintage, 1990 [1976]). For elaboration on this idea in colonial contexts, see John Willinsky's fascinating book *Learning to Divide the World* (Mpls: University of Minnesota Press 2000). In it, he remarks upon the modern education's "encyclopedic impulse" as a manifestation of this will to knowledge.

bodies is far from innocent, even in the name of justice. I offer these observations about my own disciplinary history so as not to place myself outside of the argument I will be making.

My second claim is helped along by the subsection of McCloskey's scholarship that takes up historical thinking about the field of economics. I read this work as her attempt to point to the hazards of forgetting our disciplinary histories. However, the tricky thing—or perhaps I should say the real object lesson of this talk of mine—is that the formation of our arguments are themselves inevitably made meaningful by certain kinds of forgetting of histories. In other words, McCloskey has helped me name a paradox I take to be at the very foundation of *disciplinarity*.

In 1991, a special issue of *Poetics Today: The International Journal of Theory and Analysis of Literature and Communication* was devoted to the topic of disciplinarity, which can be defined as "the ways in which a discipline regulates what counts as knowledge, who may speak, and what may be said."[6] This is a fancy way of saying how we negotiate power in places like this. The special issue came out of a 1989 GRIP (Group for Research into the Institutionalization and Professionalization of literary studies) conference of which McCloskey was a part. This conference was organized by one of my mentors at University of Minnesota's English Department, Ellen Messer-Davidow, who, in my own process of writing a dissertation about the formation of women's studies, helped me learn a thing or two about disciplinarity. I still require her introductory article from this *Poetics Today* issue for students in my "Translating the Liberal Arts" capstone. Because at the end of one's undergraduate career, I think it important that students have meta perspective on how and why their thinking has been disciplined by their chosen field of study: "what you think has a history, and that history isn't necessarily your own!" From that introductory article, my students learn that

> [t]o call a field a 'discipline' is to suggest that it is not dependent on mere doctrine and that its authority does not derive from the writings of an individual or a school, but rather from

6 This draws from Foucault's complex notion of "discipline" from his *Discipline and Punish: The Birth of the Prison*. (NY: Vintage, 1975) and is taken up extensively by Ellen Messer-Davidow, David Shumway, and David Sylvan, first in their introduction special issue of *Poetics Today* in 1992 on disciplinarity and then later in their edited volume, *Knowledges: Historical and Critical Studies in Disciplinarity* (Charlottesville: University Press of Virginia, 1993).

> generally accepted methods and truths.... [And that] 'discipline' also refer[s] to the 'rule' of monasteries and later to the methods of training used in armies and schools. The concatenation of these two senses suggests that to be trained in a branch of knowledge is to be disciplined and ultimately to attain discipline, which is believed to be the quality of self-mastery (202).

So the religious metaphor of "disciple" to name our peculiar investments in these knowledge projects we call our own is apt.

McCloskey's contribution to this special issue of *Poetics Today* was titled "Voodoo Economics," a term that juxtaposes two disparate references about forecasting the future based on very different world views of how human events unfold. Of course, the term "voodoo economics" is catchy because it has a specific affective punch for anyone who is old enough to remember the Reagan years and its version of supply-side economics. (George H.W. Bush dismissed Reaganomics as "voodoo economics" before he was chosen as Reagan's running mate, which was before he denied that he ever used the term "voodoo economics," which finally was before the video tape of him saying it was shown to the nation on nightly news). It's like the 2016 election all over again!

What I love about this article and a whole swath of McCloskey's interdisciplinary scholarship is the historical thinking that she does around academic disciplines and their peculiar forms of knowledge production. In this piece, which she tells us came out of a poetry seminar at a Dartmouth summer institute, "magic" is contrasted with "poetry" for the purposes of reminding practitioners of economics about the limits of forecasting human events. She states: "my theme is that, in human affairs, there is wisdom but not omniscience. Social engineering fails because forecasting and other magic fails. I would argue that economics itself says this" (287).

The primary contrast that drives her argument is between *magic*, which is childish, and *poetry*, which is grown up. So, for instance, magic "claims to have solved scarcity. It leaps over the constraints of the world".... [It represents] "the desire to get outside what is ordinarily possible" and it "dreams therefore of achievement without effort" (288). While there would seem to be practicalities associated with calling on magic—no effort along with the promise of great results—she itemizes the ways in magic always fails because it is arrogant, exclusionary, non-transferable, lacks transparency, and, let's face it, is overly elaborate (all

those time-consuming rituals!). "Childishly, it gives way to the pressure of desire. Scarcity is wished away."

While this is not what economics—the discipline—promises, McCloskey argues that too often it is what economists fall for given the seductions of being cast as a forecaster: "Economists are routinely asked at cocktail parties what is going to happen to the interest rate or the price of housing or the price of corn. People think that asking an economist about the future is like asking the doctor at the party about that chest pain. You get an expert to do his job [for] free and you make a lot of money" (294). Of course it begs the question that if the economist could do this kind of magic that would reap vast personal fortunes for themselves, what would they be doing at a cocktail party with you? So, sure, this is childish thinking. And this is hardly just about economists. But sometimes the temptation to be the star of the cocktail party overtakes our better—that is our disciplined—judgments. Poetry is that which counteracts our magical thinking, claims McCloskey. It deals in limits; that is, poetry accepts its own limitations. "Poetry recognizes that words are not the things themselves. It is adult, not expecting to reproduce by mere human words the effortless magic of [say a] blue-turning spring…. [As such, g]rown up economics as a science is, like poetry, a force of acculturation. It says: you can't get that…. Magic will not help" (296-97).

But here's the warning: While poetry is not magic, it "sometimes exhibits the nostalgia for magic." And there, McCloskey claims, is the danger: an economics that is nostalgic for magic—think "money is not a thing but an agreement. Corporations are not corporeal. Exchange is a conversation of bids and asks" (298). In sum, the desire for magic of forecasting—even in the face of the disciplinary knowledge that teaches us to ignore such desires—remains with us. It happens despite our knowing that "grown-up economics is not voodoo but poetry." The proposition here is that too often our disciplines seduce us into believing in magic rather than the more "grown-up" proposition of their—and by extension, our—limitations.

My third and final point is more a loose set of connections I want to make with McCloskey's warning to her fellow economists that tracks back to bodies-as-objects-of-analysis. I am reminded of the importance of being "grown up" and knowing the limits of our disciplinary training in the work of Beloit College's Mellon Inclusive Pedagogies Project,[7] a faculty development effort in which the

7 From Beloit College's Office of Academic Diversity and Inclusiveness website: The Mellon Decolo-

questions of whose bodies fit—or do not—in predominantly white spaces like this College are interrogated at the level of the classroom. As one of the facilitators for these faculty reading/discussion groups, I see my colleagues struggle, sometimes mightily, as we trade in conversations that evoke our own disciplines as magic: "Well you see, in my X discipline this or that question/issue/ethical dilemma is solved by analyzing it through this Y method." Questions about whose bodies seem to fit (or not) in this institution are wished away with simple ideas that deflect the limits of our disciplines to explain the exclusionary bases on which they were formed. We faculty, as a rule, tend to be very attached to our status as "expert" and to say that the disciplines that produce that status are not just rooted—but in fact reproduce—the colonial histories out of which they emerged is a hard pill to swallow. No one wants to be told that too often, without knowing it, we are reproducing exclusionary discourses that center whiteness and render all kinds of others peripheral in the intimate spaces of our classrooms. This seems like such a non-sequitur and so beside the point. "No man, I'm just doing my discipline over here; that's what I get paid for." But eventually, most of us get there. After the easy answers don't seem to hold up against the data, testimony, history, and eventually gut instincts about basic fairness, most faculty are able to get to the work of demystification: first, to root out the magical thinking, and then the nostalgia for magic that allows for a very adult conversation about our disciplinary histories and their—and thereby our own—limitations to be inclusive.

As McCloskey warns us, we must not be seduced by our disciplinary magic but instead see ourselves as poets who understand limits and that our words are not the things themselves. Given that, here is that paradox that Professor McClosky is helping me unpack: the knowledges we produce, even when we are being quite adult and focused on limits, nevertheless can rest on the meanings produced by a nostalgia for magic, a certain kind of forgetting of who we are and how we got here. Take the term "voodoo economics": it is a turn of phrase that was of the moment and worked to demystify—render less magical—both the hazardous thinking about supply-side economics and the discipline of economics itself. It

nizing Pedagogies Project "adopts a developmental approach that places self-reflection, collaborative intellectual inquiry, and the student experience at the center of curricular design and research. To do this we start at the foundation of liberal arts education - the classroom - and work with faculty and academic staff on (re)thinking how they teach and work with students through a semester-long Pedagogies Series. We then turn to implementation and in-time feedback through curriculum/program development workshops paired with peer coaching to create a culture of shared responsibility and support around equity and inclusion inside and outside the classroom." (https://www.beloit.edu/oadi/facstaffdevelopment/decolonizing/).

is a term McCloskey cleverly invoked to remind us of our history so as to avoid the childish hazards of forecasting. But "voodoo economics" is, at the same time, a term that juxtaposes two kinds of forecasting that align with colonial logics of marking some bodies as magical and therefore childish on the one hand, and other bodies thought to be rational and knowledgeable of limits on the other. Just think of the what kinds of bodies the term "voodoo" bring to mind versus what kinds of bodies the term "economics" does. As our very own Dr. Sonya Johnson in the Philosophy and Religious Studies Department indicates through her research, voodoo is a "world orientation that boasts a working relationship with the dead." Our post-Enlightenment, disciplinary projects rank that kind of knowing at the bottom of the civilized/primitive hierarchy (in the Social Darwinist sense). Voodoo is a term that evokes that which is irrational and in need of discipline, because it evokes black bodies and all their supposed excesses.

What I am pointing to here is that even in our attempts to account for limitations, the terms and ideas and discourses and constructs we have at our disposal so often reproduce the very problematic logics we seek to change. No wonder faculty in those Mellon reading groups get so frustrated with me and the other facilitators: we are asking them to interrogate the colonial legacies of their disciplines so as to decenter the whiteness of their classrooms at the same time the tools we have handy are the ones we've all inherited from those same legacies.

This is small example; some might consider it trivial. A choice of one word over another; a chain of signification meant to evoke an immediate recognition. "Voodoo Economics" works as an argument, because we understand the juxtaposition as simply, well, true. But I, following McCloskey, want to argue for an attention to limits. I want us to think hard about how to do the work of heeding the limits of our disciplines, that are themselves chains of signification by which we, as their disciples, come to know the world in particular ways (and not in others). By understanding our disciplines as histories bound up in colonizing logics that produce knowledges about the bodies of others, we expose the tension of our desire for magic in the face of the mandate to know that words—like "voodoo," like "economics," even like "gender"—are not the things themselves. In that way, we grow up.

Contributors

Deirdre Nansen McCloskey Joel Mokyr Jan Osborn Bart J. Wilson
Gus P. Gradinger Stephen T. Ziliak Emily Chamlee-Wright
Joshua C. Hall Seung (Ginny) Choi Virgil Henry Storr Bob Elder
Laura E. Grube Chuck Lewis Catherine M. Orr

Department of Economics

Beloit College

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